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Counterfeit George III Farthing Die Cap

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Submitting Material for Publication

We encourage our readers to consider submitting material on early North American numismatics to *CNL* for publication. In general, this includes coins, tokens, paper money, and medals that were current before the U. S. Federal Mint began operations in 1793. However, there are certain pieces produced after the 1793 date that have traditionally been considered part of pre-Federal numismatics and they should be included. We cover all aspects of study regarding the manufacture and use of these items. Our very knowledgeable and friendly staff will assist potential authors to finalize submissions by providing advice concerning the text and help with illustrations. Submissions should be sent to the editor and can be in either electronic or hardcopy format.

I'm sure that many readers have noticed the new nameplate on the front cover of this issue. After several discussions, the *CNL* staff unanimously agreed that a subtitle should be added to our publication name in order to allow new readers and institutions to easily identify the purpose of our periodical. *CNL* has published some of the most scholarly and seminal studies in early American numismatics over the years. Thus, it was felt that a title change was desirable since, today, Newsletter infers a publication with less academic content than we attempt to provide. Therefore, the subtitle, "A Research Journal in Early American Numismatics" is now part of our publication name.

Also, I would like to direct your attention to a new statement on the inside of the front cover titled "Submitting Material for Publication." We have an expert staff waiting to help potential authors finalize their material for publication in *CNL* and we would be pleased to hear from you.

We are pleased to present another diverse issue with contributions from authors well-known in early American numismatics. This issue starts with another superb paper from Brian Danforth. Over the past few years Brian has researched and written about William Wood's coinages plus the enigmatic St. Patrick coinage. These coinages found their way to the specie-starved American Colonies and are thus part of our colonial numismatic heritage. In this paper, Brian explores the symbolism found on Wood's Rosa Americana coinage. Specifically, he studies why Wood, an ironmonger, promoter, and moneyer, would chose a Tudor style rose as the prominent central device on the reverse of this coinage. Brian's research also leads him to conclude that John Croker, chief engraver at the London Tower Mint, is the most likely person to have engraved the Rosa Americana dies.

One of the most important books on money in early America was written by our contributing editor, Dr. Philip Mossman. Titled *Money of the American Colonies and Confederation: A Numismatic, Economic, and Historical Correlation*, this *magnum opus* was published in 1993 by The American Numismatic Society. Interested in correcting discovered errors in the book, Dr. Mossman first published an errata list in 1997 within *CNL*. With the hope of someday publishing a second edition of this work, he has continued to compile a list of errors. His second errata list appears in this issue.

Minting errors on the coinages that circulated in pre-Federal America are not uncommon. Our final paper, authored by Dr. Roger Moore and Dr. Philip Mossman, discusses die clashing, die caps, and brockages as found in these coinages. How die caps and brockages occur and their relationship to die clashing is described. Several error coins are shown to illustrate discussions within the text and, importantly, a counterfeit George III farthing die cap is shown and described. Die caps have been illustrated and described in modern coinage but never, until now, in a pre-Federal coinage. To help the reader follow the discussion, three educational plates at the end of the paper illustrate the various topics with line drawings. Errors that occurred during minting are a topic of great interest to many numismatists and this paper is a significant contribution to the understanding of these three specific events.

Next, we are proud to report that Dr. Philip Mossman has been awarded the 2005 Huntington Medal Award by the American Numismatic Society. The medal is to be given to Dr. Mossman in recognition of his outstanding contributions to the field of colonial numismatics. The award ceremony will be held sometime this year.

I would like to pubically congratulate Phil on this well-deserved award. Phil is a pleasure to work

with in the preparation of each issue of *CNL*. He is extremely knowledgeable in early American numismatics and is always willing to share this knowledge by helping wherever needed. Many of the papers and books that have been published on early American numismatic subjects are of a higher quality because of Phil's work behind the scenes. Congratulations Phil!

Finally, I wish to remind you that a cumulative *CNL* index is online at <www.numismatics.org/cnl/>. The index consists of three sections: Subject and Author; Illustrations; and Page Number to Issue Conversion Chart. The index is updated after each new issue is released and is searchable by way of your software FIND command. If you locate something of interest in the index, back issues of *CNL* are available by contacting Juliette Pelletier at the ANS. Juliette's contact information is given on the inside of the front cover of each issue.

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ROSA AMERICANA SYMBOLISM

Provenance Mark and the American Rose

by
Brian J. Danforth, Ph.D.; Slingerlands, NY

The American Rose central device as found on the reverse of William Wood's 1722 Rosa Americana coinage for the American Plantations. The design is believed to be the work of John Croker, chief engraver at the Tower Mint in London.

In 1722, William Wood received a royal patent to mint the Rosa Americana series for the American Plantations. As with his Hibernia patent, the rational for this grant stemmed from the acute shortage of small change in the colonies made worse by England's economic policy of mercantilism that included as one of its tenets a prohibition against the export of its bullion coins. The patent contained the following highlights: the total value of the coins was set at £56,000; the planchets were made of a mixed compound called Bath Metal; the coins were to pass as tokens without any provision to enforce their acceptance although it was stipulated that they were to circulate as "Current money" and pass as "money of Great Britain" that gave them an elevated status; the standard weight was set at 60 pence or 120 halfpence to the pound in contrast to 23 pence or 46 halfpence to the pound for English coppers; and it was stipulated that the tokens were to pass in the colonies at their intended denomination as halfpence, pence and twopence. In keeping with colonial needs, the Rosa Americana patent would have made an invaluable contribution toward addressing the shortage of coppers in America if the patentee had not ceased minting operations within three years of receiving his grant.[1]

Rosa Americana coins differ from all other tokens circulating in the colonies. First, there was the introduction of copper pence and twopence while their English counterparts were made of silver. Although the implementation of this concept was new for the English monetary system, it was a longstanding proposal. In 1644, London's Common Council proposed regal copper farthings, pence, and twopence as an alternative to the generally disliked lightweight Lord Maltravers "Rose farthings" issued under a royal grant from Charles I. Later, in 1702, Isaac Newton as chief administrator of the London Tower Mint suggested the production of regal copper pence.[2] Second, there was the weight and size of Wood's coppers in relationship to their denomination. This is exemplified by his halfpenny and penny that approximate an English regal farthing and halfpenny respectively. Given prior colonial rejection of lightweight coppers, the Rosa Americana series had the potential to cause problems in the colonies. Third, it was Wood's intent to introduce a coin composed of mixed metals known as Bath Metal that was novel at the time although it was not an original idea. Interestingly, Samuel Davis in 1701 requested permission to issue money for the American

1. Philip Nelson, *The Coinage of William Wood for the American Colonies* (*The Numismatist*: reprint, 1962), pp. 625-30.

2. Edgar Rogers, "The Rose Farthing Tokens" *The British Numismatic Journal* (1925-26), pp. 101-2. A quantity of pattern farthings was made in 1644 although they were suppressed.

Plantations made of copper or mixed metals; Charles Tunnah and William Dale in 1713 submitted a proposal to mint English farthings and halfpence that would have a golden copper appearance as a means to gain support for their project; and private investors in 1715 proposed to make small change for the colonies composed of mixed metals, an idea successfully opposed by Jeremiah Drummer, Massachusetts's agent in London.[3]

As with modern money, symbolic messages are stamped on coins to convey a sense of national identity. On eighteenth century English coinage, the placement of the monarch on the obverse with regal titles constituting the legend and the display on the reverse of a central device to denote the nation symbolically with an appropriate corresponding legend was a common design composition. For his Irish farthings and halfpence, Wood conformed to this general format by depicting George I on the obverse with a modified regal title and the Irish harp on the reverse with Hibernia as a legend. In preparing his coins for the American Plantations, it would be expected that Wood would follow a similar design practice as is seen on the obverse of the Rosa Americana series that displays the king's bust along with an elaborate description of his titles as a legend. The reverse of the coin has a conforming legend as it references the place of circulation, America, but employs a rose as a central device whose meaning is open to interpretation. Philip Nelson, in his study on Wood's money, presented the first numismatic interpretation of this design feature:

> …It is always an interesting study in numismatics to endeavour to trace the origin of the type of a coinage which is in any way unusual to its period, as this series undoubtedly was. The result of the writer's research in this instance suggests that we may discover the prototype of the *Rosa Americana* issues in the following pattern piece of Elizabeth, from which the design for the American coinage would appear to be derived.
> Pattern PENNY of Elizabeth. Without Date.
> *Obverse*.-: ROSA SINE SPINA…surrounding a crowned rose within a dotted circle.
> *Reverse*.-: PRO LEGE REGE ET GREGE, surrounding a shield bearing a cross of St. George. Mint mark, a cross….[4]

The history of the design for this coin starts with problems encountered during the reign of Elizabeth I (1558-1603) concerning debased money introduced by her predecessors in order to avoid an overvalued coinage. The queen opposed this practice, resulting in the failure to mint small change during the first part of her reign. In response, numerous merchant tokens appeared whose lack of intrinsic value was deemed problematic. In an attempt to address this concern, a proposal was submitted in or about 1576 for the production of official farthings and halfpence that were to be called "pledges" due to their copper content. While consideration was given to the proposal, the queen ultimately rejected the concept as it was deemed no better than the practice of issuing debased silver pieces. Subsequently, the Mayor and Aldermen of Bristol requested they be allowed to issue copper farthings as an alternative to the private tokens then prevailing in western England. Bristol Tokens were authorized, being the first instance in English numismatics where a copper coinage received royal approval for circulation. Although the use of these farthings was restricted to a ten mile radius of the city, they circulated in nearby Wales due to the shortage of small change. In

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3. Sylvester S. Crosby, *The Early Coins of America* (New York: reprint, 1983), pp. 113, 141-42; John Craig, *Newton at the Mint* (Cambridge: England, 1946), p. 46; *Colonial Currency Reprints* (Boston, 1910), pp. 418-19.

4. Philip Nelson, "The Coinage of William Wood for the American Colonies, 1722-1733" *The British Numismatic Journal* (1903-4), p. 269. This citation is only partially republished in the Durst reprint; see: Philip Nelson, *The Coinage of William Wood, 1722-1733* (New York: reprint, 1978), p. 25. The citation is absent from the 1962 reprint published by *The Numismatist*; see above n. 1.

1639, Maltravers was authorized to export these farthings, noted in his grant as Welsh Tokens, to all colonies in America except for Maryland.[5]

Given the acute need for small change and the damaging effect of merchant tokens, the minting of regal halfpence in silver was resumed in 1583. In 1601 and 1602, a series of copper halfpence and pence was struck for Ireland although only pattern pieces were prepared for England during the closing years of the queen's reign with the penny specimen referenced by Nelson chronologically falling within this period although its attribution as a pattern piece is called into question by C. Wilson Peck. Varying interpretations aside, the significant hallmark of the ROSA SINE SPINA specimen is the display of a double rose that is stylistically comparable to the central device employed by Wood on the reverse of his Rosa Americana coins.[6]

1722 Rosa Americana twopence illustrating Wood's uncrowned rose. Accession number 1886.1.2. *Courtesy of the American Numismatic Society.*

1723 Rosa Americana penny showing Wood's crowned rose. Accession number 1886.1.1. *Courtesy of the American Numismatic Society.*

Against this historical backdrop, Walter Breen in his *Complete Encyclopedia of U.S. and Colonial Coins* introduced the assertion that the rose displayed by Wood was a "double Tudor rose" to depict symbolically an association between George I of the Hanoverian line of succession to the English throne and the former Tudors whose ancestry stemmed from monarchs of the preceding Houses of York and Lancaster. Breen focused on the use of the double rose as a representation of the unification of the white and red roses of the Houses of York and Lancaster, respectively, that ended a conflict known as the War of the Roses (1455-87) between feuding heirs to the throne through the establishment of the Tudor monarchy. Breen speculated that Wood's intent in using the double Tudor rose was to flatter George I by linking the Hanoverian line of succession with the Tudors and the two branches of the former Plantagenet monarchy, the Houses of York and Lancaster. Illustrating his point, Breen compared the deployment of the rose on the penny pieces of Edward VI (1547-53) and halfpence pieces of Mary (1553-54) with Wood's uncrowned rose of 1722. Breen used a similar comparison in referencing Wood's crowned rose of 1723 with the principal device on the crowns and testoons (shillings) of Henry VIII (1509-47). However, prior to the Tudors, the depiction of a rose in the fifteenth century was not considered a double rose but rather a rose illustrated as two rows of petals such as the earlier Lancaster red rose that is stylistically comparable to the Tudor and Wood rose. Even the Alba Rose of York had been bred to have a new variety by the mid-1400s that was described as a "semi-double rose." What made the double Tudor rose distinctive was its artistic colorization that superimposed

5. C. Wilson Peck, *English Copper, Tin and Bronze Coins in the British Museum 1558-1958* (London, 1964), pp. 9-10; Eric P. Newman, *Coinage for Colonial Virginia* (New York, 1956), p. 4.

6. Peck, (above, n. 5), p. 2.

the white rose on the red rose, or colored each row of petals accordingly to create a combination that symbolized the union of the Houses of York and Lancaster through the establishment of the Tudor monarchy.[7]

While the selection of a German prince to the throne of England was somewhat controversial, it was as legitimate as the consideration given to the other contender who was a distant relative of Anne (1702-14). Nevertheless, Breen disparagingly commented on George I (1714-27), creating a negative image of the king as the logical successor to the Plantagenet and Tudor monarchies. While his majesty's selection was the result of Parliament deciding which distant heir of the queen should be chosen since she had no children, his right to the throne was as valid as the selection of William and Mary (1688-94) whose succession resulted from the Glorious Revolution of 1688 that replaced the Stuart monarchy with the House of Orange through military force, putting an end to the rule of James II and his increasing association with Roman Catholicism that was deemed a threat to English Protestantism. Breen continued his disparaging remarks by calling George I a "petty German princeling" and referred to the king's inability to read English and his notable interest in his estates in Germany that appeared at times to be of greater importance to the king than his English throne. While George I had limitations in speaking English, he was fluent in French as were his chief advisors, being the international language of his time with a long tradition as a secondary language at the English royal court under prior monarchs dating back to the time when England held title to lands in France. As for the king's interest in his German possessions, there certainly is merit to the assertion that it was not always in the best interest of England as it posed disagreements over foreign policy among the king's chief ministers due to the cost to the national treasury of maintaining extended interests in European affairs and their conflicts. This charge was also laid against succeeding Hanoverian kings as when George II (1727-60) and George III (1760-1820) were criticized for involving England in the Seven Years' War (1756-63) that adversely affected English mercantile affairs. Due to the government's need to raise revenues to pay for costly military engagements engendered by that war, London attempted to tax colonists by passing such revenue enhancement bills as the 1765 Stamp Act that caused widespread discontent and in the ensuing decade led to the American Revolution.[8]

Although the design of the rose for the Rosa Americana series is stylistically similar to the double Tudor rose, and Breen's interpretation makes for interesting history, his assertion associates the reverse's central device with English events that occurred in the fifteenth century rather than having more relevance to the 1720s. This is contrary to what one would otherwise expect to see illustrated on a coinage for the colonies. It must have been a quandary for Wood to determine what would constitute an appropriate symbol as can be noted by the absence of any national representation on what many numismatists deem to be his 1717 pre-patent pattern specimens where the reverse is dominated by roman numerals to depict the denomination.[9] Certainly, Wood would not have employed a symbol that could

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7. Walter Breen, *Encyclopedia of U.S. and Colonial Coins* (New York, 1988), pp. 22-23; Nelson, (above, n. 1), p. 628.

8. Breen, (above, n. 7), pp. 40-46.

9. The design of Wood's 1717 coins varies according to denomination and variety. All depict the king on the obverse and place a regal crown above the denomination on the reverse. The denomination of halfpenny is stated as '½' whereas the value of the penny pieces is expressed in roman numerals. Contrary to Crosby and others, Breen questions any connection between the 1717 pieces and the Rosa Americana series, contending that stylistic and other comparisons lacked interpretive merit in spite of considerable evidence to the contrary; see: Crosby, (above, n. 3), pp. 145-46 and Breen, (above, n. 7), p. 23.

be interpreted to convey a sense of nationhood for the colonies as he had done on his Hibernia pieces with the harp. While it was permissible for Ireland, historically recognized as a Kingdom with a separate Parliament, the colonies as dependencies were subservient to London's control due to their establishment by means of royal grants and charters. Benjamin Franklin in noting the circulation of these new coins in Boston in 1724, referred to the reverse's central design as an "American Rose."[10] Just as relevant is the use of a rose as a provenance mark on English money in the years surrounding 1722 that had special significance to Wood's endeavors as an ironmonger or dealer in metals.

While not definitive, Franklin's perspective offers an interesting counterpoint to Breen's assertion that lacked documentation. As an astute observer of American affairs, it is important to consider Franklin's perspective of the symbolism displayed on the reverse of Wood's coppers for the American Plantations, especially since his observation is the earliest known record of how colonists viewed these new coppers. It is also important to consider the relevance of the rose as a symbol that is connected to Wood's personal life and business interests and how the symbol was used as a provenance mark on English silver coins in association with the emerging metal industry of western England.

Roses and English coinage

While roses have significant implications for English numismatics, it needs to be kept in mind that the use of roses as a symbolic representation is an age-old practice. In their historical context, roses are an ancient flowering plant that grew in the wild in the northern hemisphere, ranging from the American colonies through Europe into the Middle East. They are depicted in Egyptian tombs, Minoan art, Roman festival scenes and in religious rites from the Middle Ages in Europe. Starting with the introduction of the white Alba Rose by Romans, England's interest in horticulture grew and by the time of Henry I (1100-35) nurseries had been established to prepare grafts and seedlings. During the Crusades, Europeans discovered the red Damask Rose that bloomed twice a year, importing the plant to Europe in the mid-thirteenth century, finding its way to England through the exchange of plants with the continent. Roses were desired by English gardeners due to their colorful blooms and sweet fragrance, becoming fashionable decorative elements in carefully laid out formal gardens. The fondness for roses led to their adoption as emblems by the nobility. For the purpose of this article, the use of a specific type of rose by two royal factions that claimed the English throne is of importance. The House of York's white Alba Rose was adopted in the fourteenth century by the first Duke of York, calling it the "Mystical Rose of Heaven" to represent the virginity of Mary as a tenet of faith for Christians with the color standing for purity. The House of Lancaster's red rose, a variety within the Damask family, symbolized healing merits that pertained to eternal life as another tenet of Christianity.[11]

Since the Norman conquest of England in 1066, conflicting lines of succession pitted one heir against another with the matter at times resolved on the battlefield. A clear example of struggles among heirs was the conflict between two branches of the Plantagenet monarchy, the Houses of York and Lancaster, which led to the War of the Roses. The cause of this conflict began when Henry VI (first reign: 1422-61; second reign: 1470-71), member of the House of Lancaster, became unpopular due to losing lands in France that had been won by prior monarchs during the Hundred Years' War (1337-1453). The king also suffered from mental illness, and in 1453 was considered too ill to rule, which led to the selection of the Duke

10. Publications of the Colonial Society of Massachusetts, *Commonplace-Book of Benjamin Franklin (1650-1727)* (Boston, 1907), vol. X, pp. 204-5.

11. Penelope Hobhouse, *Gardening through the Ages* (New York, 1992), pp. 70-74.

of York as Regent who thereafter pressed his claim to the throne. Two years later, when Henry VI sufficiently recovered, the Duke was exiled from the royal court, igniting an armed revolt by the Duke to become king. The two warring sides placed badges on their soldiers to differentiate one combatant from another with the House of York displaying a white rose as part of its heraldry and the House of Lancaster employing in similar fashion a red rose. The Duke asserted he had a better claim to the throne and that succession should have passed to the House of York rather than to Henry VI and the House of Lancaster. This dynastic struggle was resolved when Henry Tudor, the future Henry VII (1485-1509) and illegitimate half-brother of Henry VI, defeated Richard III (1483-85) of the House of York at the battle of Bosworth in 1485. That year, Henry Tudor proclaimed himself king and thereafter strengthened his legitimacy by marrying Elizabeth York, the daughter of former King Edward IV (first reign: 1461-70; second reign: 1471-83), who held the best claim to the throne among members of the House of York, thereby establishing a firm basis for the Tudor dynasty. To illustrate a unified monarchy, Henry VII created an artistically stylized two toned colored rose, an unknown hybrid at the time, which combined the white and red roses of the feuding heirs into one heraldic symbol, the double Tudor rose.

The appearance of a rose on pre-Tudor money as a design element can be noted on several gold coins minted by Edward IV during his first reign, appearing as a single row of petals prominently displayed on the piece called the “rose noble” where it is centered on the side of the ship that dominated the obverse and in a much smaller format at the center of a radiant sun on the reverse. On the quarter-ryal, a small rose appears above the shield. More obvious is the rose on the reverse of the angel beside the ship’s mast beneath the rays of the sun. In a small format as a rosette, this feature appeared on Henry VI's (1422-61) series of gold nobles, half-nobles and quarter nobles along with silver pieces of various denominations ranging from farthings to groats minted between 1427 and 1430 in the king’s “Rosette-mascle” mintage.[12]

The display of a double rose on English money as a central device appeared on coins issued by the first Tudor to rule England, Henry VII, as illustrated on his sovereigns as an oversized double rose that dominates the reverse of the coin with the royal shield at the center. This design feature was also employed on the sovereigns minted by Henry VIII, Edward VI, Mary (1553-54) and Elizabeth I. A similar depiction was used on the ryal (a ten-shilling coin) minted by Henry VII and James I (1603-25). The illustration of a crowned rose as a central device for a coin’s reverse appeared on halfcrowns and shillings issued by Henry VIII and used on the halfcrown by Edward VI. The crowned rose on the obverse of regal money as a central device appeared on Henry VIII halfcrowns and crowns and Edward VI crowns, occurring at the time when English crowns were called “crown of the double roses.” The crowned rose later appeared on the halfgroats or twopence issued by James I and continued by Charles I (1625-49) who also issued a halfgroat where both the obverse and reverse displayed a crowned rose. The design of an uncrowned rose in a small format appeared on a variety of the farthings issued by Henry VIII where it was displayed on the long cross. The more prominent illustration of the uncrowned rose as a central device appeared on the penny and halfpenny issued by Edward VI and later used by James I and Charles I who also placed this feature on both the obverse and reverse of one variety of penny. For farthings, the crowned rose appeared on Maltravers’s coppers that were called “Rose farthings” due to the prominent placement of this element on these private tokens authorized by a royal grant. Stylistically, the rose on these farthings appeared in two distinct forms: the traditional double

12. Peter Seaby and P. Frank Purvey (eds.), *Standard Catalogue of British Coins: Volume I, Coins of England and the United Kingdom* (London, 1978), pp. 109, 115-16; *Coincraft’s 2000 Standard Catalogue of English and UK Coins 1066 to Date* (London, 1999), pp. 142-43, 177-78.

Tudor rose designed as two rows of petals; and a rose designed with only a single row of petals. Thereafter, the use of a rose as a central device on English money is discontinued, having played an interesting although comparatively minor role since this symbol did not appear on most coins issued by the Tudor and Stuart monarchs. The traditional reverse design for Tudor regal money was the long cross over the royal shield or the shield over the cross while the Stuarts in the early seventeenth century preferred an enlarged royal shield.[13]

The use of a rose in the legend of regal coins appeared on Tudor money issued by Henry VIII. On farthings issued during his second and third mintage (1526-47), the obverse legend reads: RUTILANS ROSA or "dazzling rose" along with its appearance on the reverse of his edition of a unique coinage entitled the "Crown of Rose" that was valued at four shillings sixpence that reads: HENRIC RUTILANS ROSA SINE SPINA or "Henry a dazzling rose without a thorn." On Edward VI farthings, the obverse legend reads: E. D.G. ROSA SINE SPI or "Edward by the grace of God a rose without a thorn." This legend in modified form was used on Edward's halfpence, eventually appearing in his third mintage as EDG ROSA SINE SPINA. Given the acute need for small change during the reign of Elizabeth I, consideration was given to issuing a copper coinage. As part of these deliberations, pattern specimens were made, comprising various features with the most significant piece being a penny specimen whose reverse design contained a crowned double rose surrounded by ROSA SINE SPINA as its legend as referenced previously by Nelson. The use of this term as a legend on regal money was also employed by James I as part of the legend on his halfcrown, halfgroat or twopenny and penny pieces.[14]

The rose as a minor component of the central device on the reverse of English money reappeared in a small format on the fourpence issued by Charles II where four interlinking 'Cs' were used to denote the coin's denomination. In one of the letter's open spaces appeared a small rose to denote England and in the other spaces a thistle for Scotland, a harp for Ireland and a fleur-de-lis for France. The rose also appeared on several types of gold coins issued by Anne. The reverse design of the half guinea, guinea and five guineas conformed to two basic configurations. During the first part of her reign, four crowned cruciform shields representing England, Scotland, Ireland and France dominated the reverse. The shields were separated by four sceptres with a small rose in the center. After the union of England and Scotland in 1707, this small element was replaced by the Star of the Order of the Garter. The use of the rose in these instances is minor although it shows the use of this feature on a variety of non-Tudor coins since the queen was a descendent from the House of Stuart established by William and Mary.[15]

The rose was also used as a mintmark on regal gold and silver coins. It was used by Edward IV between 1468 and 1469 during his initial reign upon taking the throne from Henry VI, who, upon returning to the throne, used the rose during his brief reign between 1470 and 1471. When Edward IV regained the crown, the rose reappeared as one of his mintmarks between 1471 and 1483 as it did on Richard III coins between 1483 and 1485. Henry VII who restored order to dynastic rule in England employed the rose as a mintmark at two distinct intervals: 1485-87 and 1504-09. Henry VIII used the rose for most of his reign as did his successor Edward VI although Elizabeth used it infrequently. James I used the symbol between 1605 and 1606 and again between 1620 and 1621, as did Charles I: 1631-32 and 1642-45. During all of these reigns, the rose was rarely employed as a mintmark on royal coins where a variety

13. Coincraft's, (above, n. 12), pp. 106-9, 121-22, 155, 187-88, 226, 306-7, 368, 371-72, 393-94, 401, 404.

14. Coincraft's, (above, n. 12), pp. 188, 199, 306, 371, 377, 391, 393, 401.

15. Coincraft's, (above, n. 12), pp. 424, 448, 463, 553.

of other symbols such as castles, martlets, crosses and various animals were used. The design of the rose mintmark also changed over time. Initially it was represented as a single row of petals. Mary employed a half-rose as one of her two mintmarks and Mary and Philip (1554-58) used a half-rose with the letter "H" as one of their two mintmarks. Elizabeth redesigned the symbol as two rows of petals, a feature maintained by James I and Charles I. Charles II was the last monarch to use mintmarks in the traditional manner, employing only a crown as a symbol. William III during the Great Recoinage of 1696-98 that recalled all outstanding hammer-struck money to be reissued, as milled coins, used various letters to represent the five provincial mints that briefly operated in order to more easily facilitate the redemption process: B for Bristol; C for Chester; E for Exeter; N for Norwich; and Y for York. In using the rose as a mintmark, it is significant to note that it was often used to signify coins struck at the London Tower Mint, which may have had some meaning to Wood since he was required to produce the Rosa Americana series in London as per terms of his patent although the use of mintmarks on regal money had fallen into disuse by the time he became a moneyer.[16]

Of interest is the use of the rose as a mintmark on Irish money. The last regal mint to operate in the Kingdom was during the reign of Edward IV (1461-83) that produced a popular series of silver pence and groats along with copper farthings and brass half farthings. Mints were established in both Dublin and Waterford, issuing an array of coin types among which is the “rose coinage” that employed a rose in the center of a radiant star as its mintmark. A century and a half later, James I issued a limited quantity of Irish silver sixpence and shillings struck at the London Tower Mint that employed a rose as a mintmark, a project initiated to replace debased Irish silver money introduced by Mary and expanded upon by Mary and Philip, and Elizabeth. The debased nature of these prior coins was so extensive that James I, in 1605, discounted their value by two-thirds; and, shortly thereafter, reduced them to 75 percent of initial face value. This was the last time a regal gold and silver coinage was struck for Ireland until the establishment of the Irish Free State in 1921. Given Wood’s interest in Irish monetary affairs as a result of his Hibernia patent, he was undoubtedly aware of the use of the rose on Irish money although it would have had little significance in regard to the American Plantations.[17]

The rose was also used as a privy mark on copper farthings authorized by James I and Charles I in the early seventeenth century. These farthings were intended to replace unauthorized town and merchant tokens that dominated the nation’s small change. Produced by an estimated 3,000 private minters, these “leaden tokens” caused general dissatisfaction. In response, during the opening years of the reign of James I, Robert Cotton proposed to make farthings sanctioned by the crown since the king did not wish to be directly associated with the issuance of a non-silver coinage. Reaching a decision in 1613, James I, who ruled Scotland as James VI, authorized Lord Harington, a descendent of the Scottish Bruces and a favorite of the king, to mint farthings. Upon Harington’s death, his son conveyed the patent to the Duke of Lenox, who later took the additional title of Duke of Richmond, obtaining an extension of the patent in 1616 for a term of 21 years. In 1623, Lenox/Richmond died and his wife, the dowager Duchess of Lenox/Richmond succeeded him as grantee with the added participation of Francis Crane. In 1634, Lord Maltravers, who

16. Coincraft’s, (above, n. 12), pp. 89-92, 101; Seaby and Purvey, *op. cit.,* pp. 115, 125-26, 149-51, 158, 195, 208-9.

17. James Simon, *Simon’s Essay on Irish Coins, and of the Currency of Foreign Monies in Ireland* (Dublin: 2nd edition, 1810), p. 44; Edward Hawkins, *The Silver Coins of England* (London, 1876), pp. 453-84; Patrick Finn, *Irish Coin Values* (London, 1979), pp. 11-12, 15-17. Excluded from discussion is the James II Irish mint that produced his gunmoney since it operated after he was dethroned in 1688.

had married the dowager's niece, became Crane's partner. Due to general public dissatisfaction with the tokens produced by this succession of patentees, a new patent was issued in 1636 to Crane and Maltravers whose redesigned coins became known as "Rose farthings," although, like their predecessors, the coins were lightweight. Three years later, after the death of his partner, Maltravers purchased Crane's interest in the project, ending a confusing story of who was involved in minting these controversial tokens. Production ceased in 1642 due to opposition to lightweight coins from the newly elected Puritan Parliament. Peck, in *English Copper, Tin and Bronze Coins in the British Museum 1558-1958*, identified 71 privy marks for these farthings of which two differently designed roses are described: #56 – a barbed rose with two rings of five petals with a seeded center; and # 57 – a simpler rose consisting of a single ring of five petals round a pellet.[18]

The rose also appears as a rosette on a limited number of English silver coins, taking a prominent place on a coin's obverse in spite of its small size in comparison to its use as a central device in other instances. This feature made its appearance on Edward VI shillings struck during the third period of his mintage between 1551 and 1553 and only on those shillings noted as containing fine silver as the majority of his silver coins were debased, a practice continuing into the next reign until Elizabeth eventually put a stop to the practice. Generally, this design element was reserved for England's smaller silver coins, appearing on Edward VI sixpence to the left of a front facing king and later on Elizabeth's sixpence where the rosette appeared to the right behind the queen's left facing bust. The rosette was not used by these two monarchs on their groats, reappearing on their threepence. Thereafter, it appeared on Elizabeth's three-halfpenny and three-farthing pieces.[19]

Stylistically, the design of the rose on Tudor money varies significantly from its appearance on early Stuart coins, the sole commonality being a rose consisting of five petals. One obvious distinction was the use of a single versus a double row of petals as noted on the early farthings of the 1600s. Otherwise, the general configuration is two rows of five petals each that are associated with the double Tudor rose and as used on Rosa Americana coins. Another variant is the construction of the center of the rose. Henry VII, who introduced the sovereign as a new coin in the nation's monetary system in 1489, placed a large royal shield in the center of his rose. Although Henry VIII retained the shield on his sovereign pieces when he introduced the crown in 1526 as a new English coin, he placed a crowned rose as a central device on the obverse that led to the coinage being called "crown of the double rose" whose center was a seeded rose consisting of a number of small pellets as seen in the design of the Rosa Americana series. A final stylistic element is the use of the spaces between the petals on the outer row of the rose. On Henry VII sovereigns, a sharply pointed leaf separates the petals, which is subsequently redesigned as a fern-like curving leaf on the sovereigns issued by Henry VIII, Edward VI, Mary and Elizabeth along with the ryal issued by James I. The three pronged element that separates the petals on Rosa Americana coins appears as a component on the privy marks on James I and Charles I farthings, creating a design that Peck calls the "barbed rose." A final stylistic element that is very obvious on the various roses placed on these coins is the shape of the petals. When Edward IV introduced the single rose on his nobles in the 1460s, the top of each petal was indented or curved inward, a feature continued by the Tudors. The construction of a rose with rounded petals was adopted by the Stuarts on their early coinage and is the shape employed in the Rosa Americana series. On all the roses used by these early monarchs, the uniquely designed "thistle crown" of James

18. Peck, (above, n. 5), pp. 19-31; A. E. Weightman, "The Royal Farthing Tokens" *The British Numismatic Journal* (1906), pp. 208-9, 213-15; C. E. Challis, *A New History of the Royal Mint* (Cambridge: England, 1992), pp. 740-43.

19. Coincraft's, (above, n. 12), pp. 228, 247-48, 283, 313, 377.

I stands out due to the rose's design on a curved elongated stem with two leaves that evokes a comparison with the 1733 twopence in Wood's Rosa Americana series.[20]

Provenance marks

An important design element on English coins that has a connection to Wood is the use of provenance marks on the nation's silver coinage to denote who supplied the London Tower Mint with bullion to strike the nation's money. During the sixteenth century, silver from mines in Spanish South America found its way to the rest of Europe as Spain undertook an expansive foreign policy. England acquired a significant portion of the silver it needed to produce its money as a result of this inflow from South America; and, by the late Elizabethan period, the quantity was significant enough to enable England to increase its production of silver coins.

Augmenting the supply of Spanish silver was the mining of domestic silver with Wales as the center of this activity. In 1637, Thomas Bushell established the Aberystwyth Mint to produce silver coins on behalf of the crown, obtaining the metal from surrounding mines. As a means to designate the coins struck at the Welsh mint, a grouping of feathers constituting a provenance mark and referenced as a "plume" or "plumes" was placed at various points on the coins. On halfpence, the reverse central device is a plume atop a crown; starting with the threepence, the plume is on the obverse before the face of the king; and for the halfcrown, the plume is behind the king mounted on a horse as well as on the reverse above the oval shield. During the Civil War, parliamentarians seized the London Tower Mint and in order to protect the king's ability to mint silver coins, the Welsh mint under the management of Bushell, a confirmed royalist, moved to Shrewsbury in 1642 and the following year to Oxford with coins issued from these sites retaining their distinctive plume mark although the symbol was not necessarily used at other royal mints established during the war years. In the closing years of the conflict, the Aberystwyth Furnace Mint was established, operating between 1648 and 1649, issuing a limited number of pieces that also displayed plumes. Coins struck at the Aberystwyth mints used silver that actually came from Wales, whereas after those dates, the symbol appeared on English money whose silver came from other sources in addition to Wales and England.[21]

Upon the restoration of the monarchy in 1660, Charles II (1660-85) authorized the modernization of the London Tower Mint under the direction of Peter Blondeau who would later produce the St. Patrick series for Ireland. For the first time, provenance marks were placed on regal silver coins issued at the London Tower Mint although the practice was inconsistent. For example, of the five obverse types of crowns issued by the king, only one had a small Tudor style rose on it, denoting silver obtained from mines in western England. Depicting a new source was the appearance of an elephant or an elephant and castle as a provenance mark to denote silver obtained from the Africa Company, a trading monopoly established in 1662 as the Royal Company of Adventurers and reorganized in 1672 as the Royal African Company to control England's emerging commercial interests in Africa that included the slave trade. To denote silver from Wales, plumes reappeared on some English coins. Provenance marks rarely appear on the silver pieces of James II, and failed to be used on William and Mary money. Provenance marks appeared on William III money during the closing years of his reign. Of special note is the placement of a new provenance mark, roses and plumes, to designate silver obtained from the various companies in western England that

20. Coincraft's, (above, n. 12), pp. 105-8, 122, 155, 160; Peck, (above n. 5), p. 30; Breen, (above n. 7), p. 25.

21. Coincraft's, (above, n. 12), pp. 197-99, 237, 285, 394; Challis, (above n. 18), pp. 281-82.

smelted down lead using pitcoal and seacoal to obtain silver that was sold to the London Tower Mint.[22]

Starting with William III, the basic design of the reverse of English silver money conforms to the following configuration: the provenance marks appeared in the angles of the central device that displayed four crowned cruciform shields representing England, Scotland, Ireland and France prior to the unification of England and Scotland and thereafter two of the shields were divided to display England and Scotland together on a shield. Upon the succession of George I in 1714, one of the divided shields was modified to denote the king's German possessions.

1713 Queen Anne crown [above, accession number 1905.57.418] and 1718 George I crown [below, accession number 1954.203.223] showing roses and plumes provenance marks on their reverses. The rose provenance mark denotes that the silver in the coin was either mined or refined in western England. *Courtesy of the American Numismatic Society.*

Queen Anne employed provenance marks more consistently on her silver coinage although there were notable lapses. Gone was the prominent use of the elephant or elephant and castle symbol as in 1698 the Royal African Company's trade monopoly was terminated. A new provenance mark, VIGO, appeared briefly on the obverse beneath the queen's bust to designate silver captured from the Spanish galleons at the battle of Vigo Bay in October of 1702. According to the terms of the 1703 warrant authorizing this provenance mark, its intent was to memorialize for posterity the glorious military victory at Vigo Bay. During her reign, the term "Quaker's Money" came into common usage, applied to English silver money that displayed the rose as part of its provenance mark to denote silver either mined or refined in western England where Quakers played a prominent role in the nation's emerging metal industry. This is also the era in which Wood emerged as an ironmonger, destined to play a key role as a moneyer a decade later.[23]

Upon the succession of George I to the throne, according to the common reference on English coins, *Coincraft's Standard Catalogue of English and UK Coins 1066 to Date*, provenance marks had become: "so prolific that their existence on a coin was the rule rather than the exception…" such as their appearance on every sixpence minted for the new

22. Coincraft's, (above, n. 12), pp. 478, 499, 504, 526, 528, 542.

23. Coincraft's, (above, n. 12), pp. 424, 482, 504, 528, 544.

monarch.[24] Starting with coins dated 1715 until the time Wood minted his Rosa Americana series, roses and plumes were the only provenance marks placed on the king's sixpence, shillings, halfcrowns and crowns (provenance marks were not used on penny, twopence, threepence or fourpence coins since the time of the Aberystwyth Mint). The design for the rose was consistently the same – a stylized double Tudor rose that had prominent placement on the reverse of George I coins. Beginning in 1723, the initials SSC appeared to denote silver from the South Sea Company as did WCC below the bust on the obverse and on the reverse two interlocking "C" letters alternating with plumes in the angles for the Welsh Copper Company. The prevalence of roses and plumes on George I coinage to represent the various companies from western England that smelted down lead to obtain silver denotes the rise in importance of ironmongers such as Wood in this part of England who were slowly transforming England from an agrarian and mercantile nation into an industrial power. The use of these provenance marks continued into the reign of George II (1727-60) with the addition of a new source of silver, LIMA, for silver captured by Admiral Anson during his voyages around the world and authorized to be placed on coins as per terms of a proclamation issued in 1745 to memorialize this historic event.[25]

It should be noted that provenance marks were also placed on England's gold coins. Starting with Charles II, the elephant or the elephant and castle symbol appeared on the obverse beneath the monarch's bust since the Africa Company was a major source of gold for the nation. Anne also used the VIGO symbol since gold was captured along with silver during that naval engagement at Vigo Bay. Finally, the mark, EIC, appeared on George II gold coins to denote gold obtained from the East India Company. In contrast to the prevalence of provenance marks on his silver coinage, these symbols were used less often on George I gold coins, appearing only on the half guinea and guinea. Surprisingly, when George I introduced the quarter guinea as a new coin for the English monetary system, no provenance mark was stamped on it.[26]

The importance of provenance marks was *not* to specify that the silver in a coin actually came from the promoted source. This was impossible from a practical stance given operating procedures at the London Tower Mint. The mint in the early 1700s received silver as it was delivered, stockpiling it until there was a sufficient quantity to undertake a production sequence and then blended the silver on hand in the melting pot. The real significance of provenance marks was as promotional symbols: plumes reappeared on silver coins the year after Prince Rupert became involved in Welsh silver mining; elephant and castle to advertise the African Companies in which the monarchy was a major investor; VIGO on Anne's coins to memorialize a military victory; and roses and plumes to promote the emerging metal industry of western England that was dominated by Quakers whose political support for the Whigs enabled the party to gain control of the House of Commons in 1715. This last point is significant politically to George I whose selection as king was supported by the Whigs while the Tories supported another relative of Queen Anne. The Whigs retained control of the House of Commons for decades after their 1715 victory and George I became a supporter of their policies that led to centralizing power under Prime Minister Robert Walpole, a supporter of Wood in his many business ventures, including the retention of the Hibernia patent in spite of the controversy that surrounded his Irish coinage. As additional confirming evidence of the importance of western England to George I was the appearance of only roses and plumes on his silver coinage from its initial introduction at the beginning of his reign in

24. Coincraft's, (above, n. 12), pp. 530, 544.

25. Coincraft's, (above, n. 12), pp. 483, 505-6, 530-31, 545.

26. Coincraft's, (above, n. 12), pp. 421-25, 435-37, 445-49, 461-63, 475.

1715 until 1723 when the South Sea Company became an additional provenance mark, a company in which the king was personally involved. In spite of the continued delivery of silver to the London Tower Mint from Wales as acknowledged on Anne's coins, the stand-alone plume provenance mark is deleted on George I coinage, thereby allowing the reverse of his silver coinage to focus solely on the importance of western England in maintaining political stability for his reign. As C. E. Challis, noted historian on the history of the London Tower Mint, commented: "Although distinctive symbols…the marks served more as an advertisement than as an indication of bullion origin…."[27]

The rose as a promotional provenance mark supported the mining and smelting industries of western England, a region that Wood played a prominent role as a politician and ironmonger, holding leases on mines throughout the region that extracted various metals, including silver. Wood was a noted projector or promoter of his various businesses and of England's emerging metal industry in general. From this perspective, it can be speculated that Wood adopted the rose provenance mark that was stylistically a double Tudor rose with barbs in the spaces between the petals and a seeded center as a promotional symbol for his enterprises. Unlike his coins for Ireland where the harp, a national symbol of the Kingdom of Ireland, was used as a part of the central device to denote the place of issuance, there was no national symbol that could depict the diverse colonies of the American Plantations that extended from the Caribbean to the Canadian frontier. Further, to promote a sense of nationhood for the Americas would have been controversial and counterproductive to the potential success of the venture. Given this premise, the reverse design of the Rosa Americana series can be interpreted as a form of provenance mark to denote and promote the mining and smelting works of western England, especially its copper and emerging brass foundries whose metals were used to make Wood's Money.

John Croker (1670-1741)

At this juncture, it is crucial to examine who was responsible for designing regal coinage during the era when the double Tudor rose was used as a provenance mark. From the time of the restoration of the monarchy in 1660 until the reign of William III, the Roettier family dominated the designing and engraving of regal money. In 1689, John Roettier retired as the chief engraver at the London Tower Mint due to the loss of the use of his right hand as a result of shrinking tendons. George Bowers was appointed as his replacement although his tenure was cut short by his death in 1690. Henry Harris was subsequently appointed to the position although he was not an expert die maker, hiring John Roettier's son, James, to perform the task of mint engraver. In 1697, James was accused of counterfeiting regal coins and was dismissed from the mint although the charge was never proven. As a former appointee of deposed James II as well as being a Roman Catholic, the charge may have been motivated by other factors, which is likely since James was allowed to keep his tools along with his pension. As his replacement, Harris in 1697 hired John (Johann) Croker, a German jeweler from Dresden, Germany, as Assistant Engraver; and the following year hired Samuel Bull as Probationary Engraver. Upon Harris' death, Croker was appointed chief engraver in 1705, retaining the position until his death in 1741.[28] Also in 1705, Bull was promoted to the position of Second Engraver. During the closing years of minting William III money, Croker was responsible for engraving and all design changes made to regal money. While Bull offered

27. Coincraft's, (above, n. 12), pp. 525-26; Challis, (above, n. 18), pp. 433-34. For a discussion on the topic of Whig politics and Wood's Hibernia patent; "London's View of the Wood's Controversy: Drive for Power and Failure of Arrogance" *The C4 Newsletter* (Summer, 2001), pp. 7-16.

28. Croker's death is reported at times as occurring in 1740 since he died in March of 1740 according to the old calendar; 1741 as per the modern calendar.

assistance, he lacked the necessary skills to execute fine designs as noted by numismatists on the less than satisfactory William III type 3 halfpenny whose engraving is attributed to him. These events are significant since a finely designed and engraved double Tudor rose appeared for the first time in 1699 on the reverse of English regal silver money as a provenance mark that undoubtedly can be attributed to Croker's craftsmanship. For the remainder of Croker's tenure at the London Tower Mint, the same finely designed rose is used as a provenance mark on regal silver coins.[29]

There are no clear records specifying who designed the silver coins on which the rose provenance mark appeared. It is commonly referenced that Croker was the designer of the bust of the various monarchs during his tenure at the London Tower Mint where his engraving of the hair of William III is noted for its intricate detail as can also be seen on George I coinage. At other times, Bull is mentioned as assisting Croker in engraving various components of obverse dies such as the silver series for Anne. Upon the union of England and Scotland during her reign, a Scottish engraver, James Clerk, is referenced as involved in dies used to make sixpence and shillings although his work is assumed to have been confined to pieces struck at the Edinburgh Mint that bear the letter "E" beneath the queen's bust on the obverse. The London Tower Mint hired an additional engraver, a Swiss named Johann Rudolf Ochs (at times spelled Ocks), who is referenced in general as assisting Croker. In particular, Ochs is associated with the obverse dies of George I regal farthings and halfpence where the depiction of the king is dramatically different from work attributed to Croker that has similarities to the bust on Wood's Money. Sifting through these associations, it is clear that the rose provenance mark that made its appearance on William III money was initially designed by Croker. During subsequent mintages, the size of the rose changed slightly, which may or may not have been the work of one of the other engravers, since the reverse side of a coin was deemed less important and was often placed in the hands of an assistant to execute. In 1699, however, Croker's only assistant for engraving was the inexperienced Bull. Given these particulars, it can be reasonably stated that the design for the rose provenance mark that clearly resembles the reverse of the Rosa Americana series was done by Croker with later modifications such as sizing handled possibly by an assistant.[30]

The construction of the rose provenance mark by Croker contains the following key Tudor elements: the double rose; each row has five petals; and the center is noted as the "seeded rose" constructed of several pellets. Croker merged these features with elements noted on early Stuart roses: the spaces between the petals are "barbed" and the top of the petals are rounded instead of indented as on Tudor roses. Since the rose on Wood's Money was used as a central device rather than a much smaller provenance mark, Croker had additional space in which to insert new elements in the construction of Wood's rose. The most notable addition made by Croker pertains to the inner row of petals that are also barbed. Aside from the number of pellets used in creating the seeds at the center of the rose, the overall design of the rose on the reverse on Wood's Money is consistent aside from the 1733 coinage that offers a completely different construction.[31]

The significance of Croker's rose provenance mark to the design of the Rosa Americana series is apparent when Wood undertakes preparations for his coinage for the American Plantations. For making dies, it is commonly referenced by numismatists that Wood retained

29. Coincraft's, (above, n. 12), pp. 423, 528, 543; Peck, (above, n. 5), p. 168; Challis, (above, n. 18), pp. 363-65, 409.

30. Coincraft's, (above, n. 12), pp. 481-82, 504-5, 528-30, 542, 544-45; Challis, (above, n. 18), p. 406, 596, 608.

31. For a comparative illustration of the design elements used by Croker on Queen Anne's crown piece and on Wood's Rosa Americana twopence; Coincraft's, (above, n. 12), p. 482 and Breen, (above, n. 7), pp. 24-25.

the firm of Lammas, Harold & Standbroke. Their role is defined by Breen as forging, turning and hardening the working dies and/or completing them with lettering and dates. Breen asserts that Croker was the actual designer/engraver of the dies, making the device punches, assisted possibly by Bull. Breen attributes Croker's involvement in the venture based on the design of the obverse bust on Wood's money that closely resembles Croker's work on regal money where his workmanship was praised for its depiction of the monarch. A comparison of key features comprising the bust of George I on Wood's money with the king's bust on regal coins contains several important similarities: the detailing of the elongated curling hair; the laurel, especially the construction of the leaves; the ribbon hanging from the hair; and several of the king's facial features such as his chin and nose. Croker was noted as the only engraver capable of making the finely executed designs for the bust of England's monarchs during his tenure at the mint (1698-1741), especially the execution of the overly detailed hair that is so prominently illustrated on Wood's money. Based on this premise, the design of the rose as a central device on Rosa Americana coinage should be attributed to Croker due to its clear similarity to the rose Croker designed as a provenance mark in 1699 for William III silver money and used on Anne, George I, and George II coins.[32]

While the involvement of a key official at the London Tower Mint in a private enterprise such as undertaken by Wood was an unusual occurrence in the 1720s, it was permissible under rules promulgated by the mint in 1706 that allowed engravers to do outside work, such as engraving medals, to be sold privately.[33] This was an age old practice at the mint where some of its chief employees engaged in activities such as making tokens for various towns and merchants prior to the issuance of regal farthings and halfpence in 1672 and when Blondeau produced the St. Patrick series for Ireland. More recently, John Roettier's sons made various commemorative medals in the 1690s such as the 1695 memorial medalet of Queen Mary who died on December 28, 1694, of small pox:

> …One large Funeral Medall of Copper, to preserve the Memory of Her late Majesty Queen Mary; On one side is Represented Her Majesty, on the other are these words: Sublatain ex Oculis Quarimus invidi – Nata. Apr 30 1662 – Mor. Dec. 28 1694. Price 5 s. a-piece. Engraved and Coined by James and Norbertus Roettier at the Mint in the Tower of London. Sold by Mr. Lane, Goldsmith, at the Rose in Lombard Street, and by several Booksellers and Cutlers in London and Westminster.[34]

Examining of production records for the London Tower Mint indicates that employees were very busy during the opening years of the reign of George I. Not only was a new monarch on the throne that necessitated new designs but an entirely new sequence of titles and shields had to be created due to the king's German possessions. The number of gold pieces issued during the first two years of the reign of George I was about triple what it had been under Anne although production of silver coins was comparable. Then, in 1717, the king authorized production of regal farthings and halfpence that entailed another massive undertaking by mint employees. After these busy early years, there was a lull in work,

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32. Breen, (above, n. 7), pp. 22-23; Philip Nelson, *The Coinage of William Wood, 1722-1733,* (above, n. 4), p. 11; Stacks, *John J. Ford, Jr. Collection: Part IX* (May, 2005), p. 79. While Breen introduced Croker as the designer, Crosby stated Lammas, Harold & Standbroke engraved the dies (see: Crosby, *op. cit.,* p. 160) and Nelson more explicitly identified the firm as "the artists" who prepared the dies (see: Nelson, *The Coinage of William Wood, 1722-1733*, (above, n. 4), p. 14). Breen mistakenly identified Bull as a Probationary Engraver (see: Breen, *op. cit.,* p. 22) while Challis lists him as Second Engraver (see: Challis, (above, n. 18), p. 409).

33. Challis, (above, n. 18), p. 365.

34. *London Gazette*, February 18, 1695.

occurring when the Rosa Americana and Hibernia patents were authorized, accelerating thereafter with a twenty-four fold increase in production of silver coins, a mintage that saw the arrival of a large quantity of silver delivered by the South Sea Company whose initials appeared that year as a provenance mark on the king's silver money. Given this production sequence, there was an opportunity for Croker's involvement in preparing dies for Wood's coinage for the American Plantations.[35]

Confirming Croker as a designer and engraver who worked on private projects in addition to his duties at the London Tower Mint was his involvement described by C. Wyllys Betts as a maker of dies "for a large number of Medals…."[36] Betts references two types of medals associated with the American colonies. One type pertained to the English naval victory at Vigo Bay on October 12, 1702, that illustrated burning vessels belonging to the French and Spanish fleet in Vigo Harbor during Queen Anne's War. This military victory was acclaimed by the English public and the queen placed the provenance mark VIGO on a series of her silver and gold pieces in celebration of the event along with noting the capture of bullion sent to the mint to make coins. Many medals were issued at the time to memorialize this historic event, as indicated by the three set of dies Croker created (see: Betts #97) to strike medals in silver and copper, reflecting the popular demand for the medal: silver for those who could afford the price; and copper for a larger segment of the population. Croker is also associated with two British-Indian Medals (see: Betts #164 and # 165) that illustrate the king on the obverse and an Indian on the reverse either throwing a spear at a deer or drawing a bow upon the animal. Croker was especially known for his numerous medalets to commemorate significant events such as the coronation of Anne and George I and the union of England and Scotland on which he was assisted by Bull. An illustration of his craftsmanship is his medal memorializing the arrival of George I in England that was creatively designed with the monarch appearing as Neptune seated in a sea-car drawn by seahorses attended by Tritons. The famed designer and engraver was also noted as the designer of a long series of privately produced medals to commemorate military victories pertaining to the many wars that engulfed Europe during his tenure at the London Tower Mint.[37]

Given Croker's reputation as a renowned designer and engraver at the London Tower Mint along with his activities as a medalist, he would have undoubtedly been considered by Wood as the designer / engraver for the Rosa Americana series. Given the similarities between the bust of George I on regal money along with the rose provenance mark and that illustrated on Wood's pieces, Croker's expertise is clearly evident. The finely designed coinage for the American Plantations resulted in many contemporaries positively reporting on the series. As noted in a Boston newspaper, this sentiment was conveyed as: "of fine mix'd Metal, for the use of His Majesty's Dominions in America…" and later mentioned as: "made of a beautiful compound Metal…."[38]

Patent requirements

The Rosa Americana patent stipulated several design elements for the new coinage. The obverse had to illustrate a bust of the king with his name or title as the legend. On the reverse, Wood was required to insert three components: a crown; the word America; and the date.

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35. Challis, *op. cit.,* p. 692.

36. William T. R. Marvin and Lyman H. Low (eds.), *American Colonial History Illustrated by Contemporary Medals by the late C. Wyllys Betts* (Winnipeg, 1964), p. 83.

37. Marvin and Low, (above, n. 36), pp. 47, 83.

38. *Boston Gazette,* September 17, 1722; *Boston News-Letter,* October 3, 1723.

In addition, Wood was permitted to modify these elements as long as he determined them to be proper, which later evolved into the Rosa Americana legend along with its motto UTILE DULCI. He was also allowed to insert royal inscriptions but only after obtaining prior approval by a warrant that such an addition conformed to the Royal Sign Manual pertaining to George I or upon his majesty's death his heir and successor. As for the central device on the reverse, it was left to Wood to determine what he deemed was an appropriate feature, thereby granting Wood wide latitude in the matter. In selecting the rose, it should be noted that this element was not of particular importance in identifying George I as the new monarch, thereby lessening Breen's argument that Wood was attempting to create a historical link between the Houses of Hanover, Tudor, York and Lancaster. At the same time, it cannot be overlooked that the Rosa Americana and the Tudor rose have compatible stylistic features although the key element in the Tudor rose was its artistically created two toned colorization. Given these requirements, Wood took a somewhat free hand in designing his coins as can be seen when he omitted the crown and date on several types of 1722 twopence, the lack of a crown on several 1722 pence types, and the lack of a crown on several of the halfpence. For the most part, these omissions pertain to pieces that are listed by Breen as prototypes or generally rare specimens.[39]

At a later time, Wood introduced additional pattern pieces wherein he took further liberty with the design of the reverse's central device such as the uncrowned 1724 (the year is an attribution since the coin is undated) Rosa Sine Spina penny. Here, a large stemmed rose supports two smaller roses that together constitute a design that is clearly distinctive from the double Tudor rose as the main bloom is illustrated as several rows of petals rather than a depiction of one rose superimposed on another. Breen considered the legend to be another indication of Wood's attempt to flatter the king by associating him with the Tudors since the legend is to be found on Tudor money. Similarly, it is assumed that Wood's heirs may have attempted in 1733 to reinstitute the Rosa Americana patent as evidenced by several twopence pattern specimens whose central device on the reverse is a crown on top of a rose constructed by several rows of petals that are supported by a stem with a leafed branch on each side. This coin type has several unique varieties, including those made in lead and steel. Crosby, referencing Thomas Snelling, an eighteenth century numismatist, stated that while he was unaware of any proposal in 1733 for an American coinage, the specimen "has the appearance of a pattern piece…."[40]

Illustrating the limited importance of the rose or the stylized double Tudor rose to George I is its use on the king's great seal described as follows:

> …The King, enthroned, wearing a full-bottomed wig and the Collar and Badge of the Garter: holding in his right hand a sceptre terminating in a cross, and in his left an orb ensigned with a cross; his robes covering his knees and legs down to his ankles; his feet resting on a cushion. On the King's right side stands the figure of *Britannia* holding in her left hand a long spear…an ornamental scroll-shaped shield charged with the arms of England and Scotland impaled. To the King's left stands the figure of *Justice,* holding in her right hand a sword, and in her raised left hand a pair of scales. Above the throne is a canopy, from which hangs

39. Nelson, *The Coinage of William Wood for the American Colonies*, (above, n. 1), p. 628; Breen, (above, n. 7)., pp. 23-27.

40. Breen, (above, n. 7), p. 23; Crosby, (above, n. 3), p. 166; Nelson, *The Coinage of William Wood for the American Colonies, op. cit.,* pp. 625, 628; Thomas Snelling, *Miscellaneous Views of the Coins Struck by English Princes in France, Counterfeit Sterlings, Coins Struck by the East India Company…Gold Nobles Struck Abroad in Imitation of English* (London, 1769), p. 40; Bowers and Merena, *The Norweb Collection: Part 2* (March, 1988), pp. 241, 243. While Crosby included the Rosa Sine Spina pieces in the American colonial series, Breen questioned their relevance.

> a narrow piece of escalloped drapery showing seven escallops, to each of which a tassel is pendant; the spaces between the escallops are also each filled with a tassel. Upon each of the escallops is placed a badge in the following order from left to right, (i) a rose and thistle growing on one stock; (ii) a harp; (iii) a fleur-de-lis; (iv) a rose and thistle as before; (v) a harp; (vi) a rose and a thistle again as before; (vii) a fleur-de-lis. From behind this narrow piece of drapery hang curtains…On the top of the canopy is a shield with the Royal Arms….[41]

The rose in this instance stands for England and the thistle represents Scotland, being symbolic features used on English and Scottish money issued by James I. The rose and thistle growing on one stock denotes the union of the two kingdoms under one monarch upon the succession of James VI of Scotland to the English throne in 1603, taking the title of James I. As the son of Mary Queen of Scots and great-grandson of Margaret Tudor, daughter of Henry VII, the Stuart monarchy was a continuation of the Tudors and through more distant relations continuing to the Hanoverian line established under George I. It is important to note that it is not the double Tudor rose standing by itself that is displayed on the seal. Rather it is the rose and thistle combined that illustrated the linkage between the kingdoms. This symbolism is clearly articulated on the James I double crown, crown and half-laurel coins whose reverse legend states: "HENRICUS ROSAS REGNA IACOBUS - Henry united the roses, James the kingdoms."[42] On other pieces, the use of different Latin terms conveys similar messages: "I will make them one nation" or "What God has joined together let no man put asunder."[43]

Taking these antecedents as precedents, it is important to examine the elements displayed on George I regal money, which is comparatively devoid of patriotic phrases. On the obverse is the king's bust with a surrounding legend that outlines in abbreviations the many titles the king had, including the centuries old claim to lands in France. On the reverse is the traditional four crowned cruciform shield that is modified, replacing one of the two unified shields of England and Scotland to include a shield denoting the monarch's German possessions with a surrounding legend that outlines the king's German titles. Included for the first time on English coinage is a new title, announcing the king as the "Defender of the Faith" being the Church of England. There is, however, one unique feature on the reverse of George I silver coinage valued at sixpence or greater. On every piece is displayed a provenance mark while previous regal money used this feature intermittingly.[44]

Given the wide latitude Wood enjoyed in designing the reverse central device of his coinage for the colonies, there were a number of possibilities at his disposal. One of the keys to his personality was his focus on promoting his business interests as an ironmonger. An outgrowth of his desire to obtain new outlets for his copper mines was to become a moneyer. He had attempted to secure the contract to produce farthings and halfpence for George I, a project that was later assigned to the London Tower Mint. Thereafter, he focused on obtaining the patents to coin coppers for Ireland and the American Plantations. All of these endeavors were the result of his desire to encourage the further development of the nation's copper industry in which he played a pivotal role. As a projector, he was a self-promoter as was necessary in the competitive business world in which he was engaged. In this light, the use of the rose as a greatly enlarged provenance mark on the reverse of his Rosa Americana coinage can be seen as another means of promoting his metal businesses in western

41. Alfred B. Wyon, *The Great Seals of England* (London, 1887), p. 116.

42. Coincraft's, (above, n. 12), p. 127.

43. Coincraft's, (above, n. 12), pp. 110, 191.

44. Coincraft's, (above, n. 12), p. 545.

England. Obviously, this premise is speculative although it is consistent with Wood's role in England's emerging metal industry.

Wood the promoter

The rose as a provenance mark and its association with mining in western England along with its connection to the various companies that smelted ore to obtain silver that was sold to the London Tower Mint has an affiliation with Wood the promoter. This mark pertained to the center of England's metal industry where Wood concentrated his activities as an ironmonger. This is where Wood was born in or near the town of Wolverhampton in Staffordshire on July 31, 1670. The region was starting to recover in the late seventeenth century from years of neglect and abandonment that followed the Civil War of the 1640s. His mother came from a family of bellows makers associated with the metal industry. In 1690, Wood married Margaret Molyneux whose family was engaged in the metal business with a focus on copper. It is undoubtedly through his contacts with his wife's and mother's families that Wood entered the metal industry in the opening years of the eighteenth century at a time when England's copper industry was finally emerging from years of domination by outsiders. As English copper producers gained control over domestic consumption, the quality of their product improved, becoming competitive with imports from the continent. Encouraging domestic producers was the embargo on imported copper between 1717 and 1719 due to the outbreak of European hostilities. During this period, Wood was able with the assistance of his political connections to secure government contracts for the delivery of copper to the London Tower Mint. However, the brass industry, which was a component of copper manufacturing, continued to be dominated by foreign imports since the quality of domestic output remained inferior. In an attempt to protect domestic copper and brass producers, Wood published a pamphlet in 1721 entitled *State of the copper and brass manufactures in Great Britain*. His aim was to influence public opinion and affect the passing of legislation to impose duties on foreign imports, arguing such duties would benefit the nation along with the estimated 30,000 people employed in the industry. In 1717 and again in 1721, Wood attempted to secure additional sources for his copper and brass enterprises, hoping to secure a grant to mint farthings and halfpence. In the first instance, he unsuccessfully attempted to secure the contract to produce George I regal farthings and halfpence where several hundred tons of metal would be needed to inaugurate the nation's resumption of issuing small change. Wood succeeded in his second attempt when he obtained the Hibernia patent that allowed him to strike 360 tons of coppers and the Rosa Americana patent that enabled him to utilize 300 tons to make basically brass coins. These amounts may seem insignificant by today's standards, but England's copper industry was so small when Charles II inaugurated his production of regal coppers in 1672 that planchets had to be imported from Sweden. While Wood hoped his new role as a moneyer would be profitable, his purpose was to obtain additional outlets for his various interests in the metal industry, thereby stimulating domestic copper and brass manufacturing.[45]

It is unknown where Wood obtained the metal for the Rosa Americana series although it can undoubtedly be assumed that it came from his copper mines in either Wales along the English border or western England near Bristol where he struck his farthings and halfpence for Ireland. Given the importance of western England to Wood's business interests as an ironmonger, the display of a rose as a central device on the coinage for the Plantations may have been used as a means to designate the source of the metal used in the coinage. Further, roses were used in association with plumes to represent smelting operations and

45. Gerald P. Mander, *The Wolverhampton Antiquary* (Wolverhampton, 1933), vol. I, pp. 125, 146; David Mac Pherson, *Annals of Commerce* (London, 1805), vol. III, p. 116.

Wood operated one of the largest foundries in England at Tern where the facility was valued in 1713 at £2,500 or worth several times more than similar facilities elsewhere. The operation consisted of a rolling mill, forge, steel furnace, slitting mill, several smiths' forges and equipment to make wire. A contemporary description of the Tern works called it the first integrated metal processing operation in all of England if not in all of Europe although the Crowley works in northern England was actually larger. At the time, Wood also owned a less expansive facility at Southwark where pig and scrape iron was processed to produce cast-iron products. Ten years later, this foundry was managed by Wood's son, John, whose newspaper advertisements offered such Southwark items as chimney backs, stoves, anvils, coach or wagon boxes, cast iron to be used by refiners and smiths, and all types of pots and pans. Another son, Richard, in partnership Charles Lloyd III, constructed a furnace and forge at Bersham between 1717 and 1719.[46]

Wood's mining interests were extensive, and one of the byproducts of this enterprise was the extraction of silver that was sold to the London Tower Mint. The scale of this activity is noted in 1720 when Wood with the possible assistance of other ironmongers obtained from the Mines Royal and the Mineral & Battery Works mining rights in 39 of the 53 counties comprising England and Wales for the extraction of gold, silver, lead, tin, copper and all other minerals. Based on these holdings, he embarked on an unfortunate adventurous and speculative project to expand his involvement in metal industry as noted in the following promotional broadside:

> They have…at present on Foot, some of the best Iron-Works in the Kingdom…Forges for refining and drawing out Iron into Bars; a Slitting-mill, to roll, slit, and prepare the Iron for its several Uses in Manufacture…and furnish *Bristol* and *London* with several Manufactures…They also have very good Copper and Lead-Mines, with Furnaces for smelting, making, and refining the abovesaid Metals…Also the best Conveniences for making Brass…they have resolv'd to improve the Iron Trade, as much as possible, by purchasing, or taking upon Lease all such Lands, in all convenient Places, that can be found and had. And, for that Purpose, have encreas'd their Number of Partners and Shares, that they may at all times be able to raise such Sums of Money, as shall be necessary for so great an Undertaking…And they propose to give a better Price for Ores, than is at present, and yet sell the several Metals cheaper….[47]

The use of silver derived from the mines of western England and/or from the smelters of ore from the region that was used to make English regal money was commonly referred to as "Quaker's Money" since the silver came from a region where Quakers played a prominent role in the metal and mining industry.[48] Wood had an association with Quakers as either a member of the Society of Friends or sympathetic to their cause. This affiliation was noted during the controversy surrounding his Hibernia patent where he is referred to within the context of being a Quaker and more significant is a margin notation in his Last Will and Testament that acknowledges a Quaker Meeting House specified as: "Quaker Meeting House # 72, Stafford, in Somerset House."[49] Further, his son, Richard, was a business

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46. Grant Francis, *The Smelting of Copper in the Swansea District of South Wales* (London, 1881), pp. 102-3; Michael W. Flinn, "William Wood and the Coke-Smelting Process" *Transactions of the Newcomen Society*, vol. XXXIV (1961-62), p. 56.

47. *The Present State of Mr. Wood's Partnership* (Broadside, 1720).

48. Coincraft's, (above, n. 12), pp. 481-82.

49. For a detailed discussion on this topic, see: Brian J. Danforth, "William Wood's Last Will and Testament" *The C4 Newsletter* (Spring, 2003), pp. 5-18.

associate of Lloyd III, a leading Quaker ironmonger in western England. Wood's association with Quakers was important to his role in politics as their vote played a vital role in electing Whig members to House of Commons. At the time, Quakers were discriminated against in England, especially in the eastern part of the country from which many had been forced to vacate as per legislation passed in 1665. Quakers in western England supported the Whigs in large numbers, and the party's goal thereafter was to shape these voters into consistent supporters. Based on his affiliation with the Whigs, Wood in 1715 was appointed to the sensitive and important position of Receiver-General for the collection of taxes in Shropshire in western England, a pivotal county noted for its hard-fought elections. As a result of this position, Wood's political connections expanded, enabling him to embark on a new path as a major projector. It was from this background that Wood emerged in the early 1720s as a leader in the metal industry, promoting the interests of ironmongers in capturing the English copper market that had been dominated by Europeans. As a promoter of English metals, it is reasonable to assume that the use of a rose as the central device on the Rosa Americana series was another means to promote his activities as an ironmonger from western England.[50]

After his role as a moneyer, Wood emerged in the later part of the 1720s as a chief promoter of a new technology for the production of iron using coal. He received two royal patents, and attempted to establish a major initiative to undertake England's first major production of marketable malleable bar iron using coal. In 1729, he created the controversial and unsuccessful Company of Ironmasters of Great Britain with a proposed capitalization of £1,000,000. English authorities were positively inclined to Wood's venture out of the nation's need to lessen its dependence upon imported bar iron, especially from its former adversary Sweden. In furtherance of his venture, Wood, ever the promoter of his various business pursuits and England's metal industry, issued a broadside, stating:

> …the most famous Iron Operators…are now getting ready to convince the World of their great and wonderful Skill in making Iron with Ore and Pitt Coal…all Persons that are disposid [disposed] to Subscribe towards raising a Million of Money, to enable these Great Projectors to make Iron sufficient to supply the whole Nation, without the use of Wood or Charcoal, will…see the best Pig and Sow Iron made with Ore and Pit-Coal only, according to the Patent granted Mr. Wood….[51]

Within the context of Wood's business ventures as an ironmonger, he endeavored on numerous occasions to promote England's emerging metal industry. During the first part of his career, his focus was on the copper and brass industry that was attempting to free itself from dominance by Europeans. His real aim as a moneyer was to create an additional outlet for his copper mines and smelting operations in western England. Given these circumstances and lacking any appropriate symbol to denote the nationhood of the diverse colonies that constituted the American Plantations, unlike the harp for the Kingdom of Ireland, the reverse of the Rosa Americana coinage became another opportunity to promote western England's metal industry through the use of the rose as a recognizable provenance mark that denoted the mining activities of the region as appeared on George I silver coinage. While this premise is speculative as to Wood's intent, it can be reasonable assumed that this is the

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50. Arthur Raistrick, *Quakers in Science and Industry* (New York, 1950), pp. 89, 114; J. M. Treadwell, "William Wood and the Company of Ironmasters of Great Britain" *Business History* (July, 1974), p. 98; John H. Saint, *A Dissertation upon Parties* (London, 1749), pp. 8-9; Henry Hamilton, *The English Brass and Copper Industries to 1800* (New York, 1967), pp. 124-25.

51. *This is to give Notice To all Lovers of Art and Ingenuity* (London, c.1729); Treadwell, (above, n. 50), p. 105.

basis for the design of the reverse of the Rosa Americana coinage where Wood had a wide latitude in deciding the features that would appear on that side of his money.

The American Rose

An interesting counterpoint to Breen's assertion on the display of the rose as a central device as a flattering gesture by Wood to associate George I with the Tudors along with Breen's idiomatic translation of the Latin motto, UTILE DULCI "for business and pleasure" is the perspective rendered by Benjamin Franklin upon returning from a trip to Boston in 1724.[52]

Franklin was born in Boston in 1706, the youngest of 15 children fathered by Josiah Franklin, an Englishman who immigrated to the colonies in order to practice his Puritan faith. Franklin worked in his father's shop as a tallow chandler and soap boiler until he was apprenticed at age 12 for nine years to his brother James who had a contract to print the *Boston Gazette*. After losing the contract, James attempted to establish a newspaper, succeeding eventually in 1721 in publishing the *New-England Courant* noted for its political essays that led to James's imprisonment for a month due to his claim that Massachusetts officials conspired with pirates to import goods into the colony as a means to avoid paying duties, an illicit activity engaged in by many along New England's extensive unguarded coast. Benjamin faced the same charge although he was acquitted since he was only an apprentice and not deemed responsible for the libelous charge. James was imprisoned a second time for satirizing Puritan ministers and local officials, whereupon the Massachusetts General Court mandated thereafter that James be subjected to censorship prior to printing any more political articles. Failing to take heed, James continued his political writings, forcing him at one point to go into hiding to avoid jail. During periods of James's absence, Benjamin continued to publish the *New-England Courant*, inserting less offensive essays. Upon James's return to the newspaper, Benjamin, who had a troubled relationship with his brother, tried unsuccessfully to secure employment with other Boston printers, an attempt hindered by his brother. Selling some books, he set sail for New York City and failing to find work there, went to Philadelphia in 1723 where he found employment as a journeyman with Samuel Keimer. In 1724, Pennsylvania's Governor William Keith, with whom Benjamin had established a friendship, encouraged the young man to open his own printing shop, assuring him that he would obtain public contracts. Based on this promise of support, Benjamin traveled to Boston to seek his father's financial assistance for the new business. His father gave his son more good wishes than money, and Benjamin returned to Philadelphia where Keith offered to lend him the money by means of forwarding letters of credit to London to acquire the necessary equipment and supplies needed to set up a printing office, upon which Franklin set sail for England. Unfortunately, Keith never made the necessary financial arrangements, which may have resulted from Benjamin's father writing the Governor to inform him that his son was too young to be entrusted with such an enterprise. Benjamin stayed in London, working at Samuel Palmer's printing office, returning to Philadelphia the following year and in 1728 was again working with Keimer who had obtained a contract to print Pennsylvania paper currency. In 1730, Benjamin was named the official printer of Pennsylvania paper notes.[53]

During Franklin's 1724 visit to Boston, he was surprised to see the amount of available money circulating in the prosperous commercial city. Upon his return to Philadelphia, he reported on a particular new series of coins, offering his perspective on the reverse design:

52. Breen, (above, n. 7), pp. 22-23.

53. J. A. Leo Lemay (ed.), *Benjamin Franklin: Writings* (New York, 1987), pp. 1323-26, 1334, 1471-74.

> …Esq Woodward [Wood], in the year 1722, obtained a patent to Make pennys…for Ireland, and North America, on one side is K. Georges Head, and the Inscription Georgius Dei. Gratia Rex. And on the reverse, a Rose in the Midle And, Rosa. Americana utile, Dulci. 1722. In English Thus. The Sweet and profitable American Rose….[54]

Breen took some liberty with his translation of the Latin motto. According to the *Oxford Latin Dictionary*, UTILE means conductive to utility or profit, useful, serviceable; and DULCI means sweet as in taste or sweet smelling as in fragrant.[55] In an expansive manner, Breen went on to assert that the motto was derived from a phrase in Horace's *Ars Poetica*: "*Omne tulit punctum qui miscuit utile dulci* – 'He took all the applause who blended sweet and useful'" referencing its appearance on the Massachusetts Codfish paper currency of October 18, 1776.[56] These notes, comprising £75,000 in legal tender, consisted of 24 denominations, ranging from twopence to 72 shillings. The value of the first twelve denominations was expressed in pence with an unadorned pine tree on the reverse. The value of the last twelve denominations was stated in dollars and on the reverse the pine tree was surrounded by the Latin phrase Breen referenced although Eric P. Newman in his description of these notes gave a slightly different translation of the quote from Horace: "He won all the praise who mixed the useful with the sweet."[57] The same phrase appeared as the masthead on *The Essex Gazettee* published in Salem, Massachusetts, between 1768 and 1771. Obviously, a connection between the use of two words in Latin as a motto by Wood in 1722 and a quote from Horace that appeared more than a half a century later on Massachusetts currency is a stretch of the imagination in spite of its interesting association. Taken at face value, Franklin's unembellished interpretation of the motto as sweet and profitable appears more appropriate although his association of the motto with colonial horticulture was conjecture. Just as obvious, it is not known what Wood's intent was in creating this motto although it is certain that he intended his new coinage to serve a useful purpose in the colonies as well as generate a profit.

From Franklin's perspective, he saw the rose as an American flower without any reference to England and the historical symbolism that the plant played in depicting various royal families in prior centuries. Given the traditional design concept that reserved the reverse side of a coinage to display a central device as an illustration of where a coin was intended to circulate, it can be readily expected that Franklin associated this feature within the context of colonial America's cultural heritage and economy. Thus, taking a stance that Franklin's observation had meaning to American colonists, it is important to look at the prevalence of roses growing in the wild in the northern colonies, their cultivation by Indians in their rather simple gardens, and their use in colonial gardens. Further, it is important to note Franklin's description of the American rose as "Sweet" that pertained to a rose's fragrance that was desired by colonists. Their importance was noted in many colonies as exemplified by a Williamsburg law in 1705 to protect gardens facing the Duke of Gloucester Street by requiring fences to be constructed to prevent destruction caused by passing horses and cattle. Franklin's other comment that roses were "profitable" pertained to their role as a part of colonial commerce.

By the early 1600s, English interest in horticulture had grown to the point that amateur gardeners had become serious botanists. At the time, the famous garden maintained by

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54. Publications of the Colonial Society of Massachusetts, (above, n. 10), pp. 204-5.

55. *Oxford Latin Dictionary* (Oxford, 1982), pp. 578, 2117.

56. Breen, (above, n. 7), p. 22.

57. Eric P. Newman, *The Early Paper Money of America* (Iola: Wisconsin, 1990), pp. 185-86.

John Tradescant and his son was noted as containing the most comprehensive assortment of flowers in England. Furthering his specialty, Tradescant contracted with the Virginia Company to supply him with various American plants, the sale of his surplus spread American varieties throughout England. His specialty led to his appointment as Director of the Oxford Botanic Garden and later as Keeper of the Royal Gardens at Oatlands Palace. In the late seventeenth century, Bishop Henry Compton of London, whose bishopric extended to Virginia, appointed the Rev. John Banister to serve in the colonies, assigning him the additional task of collecting new species for his Brompton Park Nursery situated on 100 acres between Hyde Park and South Kensington that contained over 40,000 plants. In the early 1700s, catalogues appeared, promoting the sale of American trees, shrubs and flowers. This activity fostered the growth of specialized parks that showcased American products such as the one maintained by Lord Petre at Octagon Plantation in Essex called "America in England" that contained over 10,000 "Americans" and the notable park maintained by the Duke of Bedford called Worburn Abbey that had up to 6,000 ornamental plants. By Wood's era, English gardens were changing from the formal French style to more irregular configurations that stressed the need to create walkways lined with various "sweet" flowers such as roses. Especially advocated for the inclusion in these new gardens was the "rosary" where garlands of roses on chains hung over beds of roses. The most noted English plant collector and advocate of American products was Peter Collinson, a Quaker, who retained a Philadelphia agent, John Bartram, to collect plants for him, requiring that a minimum of 20 boxes of plants be shipped to him annually, paying five guineas a box for the latest arrival from the Mid-Atlantic colonies. Bartram eventually became a noted seedsman, selling American items to English gardeners, botanists and gentlemen with large estates, fostering the spread of American varieties throughout England. Interestingly, Franklin eventually became a significant sponsor of Bartram's endeavors, supporting fundraisers that would enable Bartram to travel throughout the colonies to gather varieties as a means to further develop the exporting of American plants to England and Europe. This relationship led to their involvement in the establishment of the American Philosophical Society in 1743 that focused on the study of natural history.[58]

From the 1500s until Wood's era, there was a great interest in knot gardens that were designed in the form of a Tudor rose. These were initially formal gardens established on large estates. By the 1600s, the gardens, noted for their "abundances of Roses" took on a more practical side: "yield much profit [selling seedlings and grafts], and comfort to the senses…reviving the spirits by the sence of smelling…."[59] Promoting the desirability of knot gardens was a 1618 publication entitled *A New Orchard and Garden* that illustrated the ideal garden layout, displaying an image identical to the use of the rose as a central device on Wood's Rosa Americana coinage. In the ensuing years, numerous books were published under such general titles as *The Gentleman's Companion* and the *Lady's Recreation* to promote the enjoyment and profit that a person could derive from making knot gardens. Other books illustrated an increasing array of designs that a person could create in their garden, combining the informal with the formal along with an assortment of mazes. One publication, after offering a variety of plans, let it to the imagination of the gardener to create her own design for a knot garden: "I leaue [leave] every House-wife to her selfe…choyse, new forms, and note this generally, that all plots…are…bordered about with…Roses…Sage, or the like…."[60]

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58. Hobhouse, (above, n. 11), pp. 111, 118, 134-35, 198-202, 208; Nancy E. Hoffman and John C. Van Horne (eds.), *America's Curious Botanist* (Philadelphia, 2004), pp. 3-5, 10-11.

59. Eleanour S. Rohde (ed.), *The Old English Gardening Books* (London, 1924), p. 58.

60. Rohde, (above, n. 59), pp. 57-61, 108, 139.

As a result of the extensive exchange of plants and sharing of horticulture information between the colonies and the home country, the double rose or two rows of petals that constituted the central device employed on the reverse of the Rosa Americana series could have several different meanings to Americans: its depiction as the desirable Damask Rose that bloomed twice a year with its symbolic relationship to religion that was a central theme in colonial America; its use as a substitute for money in the 1600s that illustrated the token nature of Wood's coins; the desirability of the flower's fragrance; and its contribution to colonial trade. While Franklin was unaware of Wood's intent in selecting a rose, he offers a perspective that might have had relevance to colonists that differs from Breen's assertion that the rose represented the hypothetical union of the Houses of York and Lancaster to form the Tudor dynasty that lead to the Hanoverian line of succession to the English throne that would have had little relevance to ordinary Americans who used these coins for daily transactions. They would have been more aware of the American rose as a flowering plant that could be readily observed in the wild and in colonial gardens.

The contrasting perspectives offered by Franklin and Breen underscore the nature of this series as non-regal small change for use in the marketplace as well as at the local tavern. As tokens, the coins could be accepted or rejected at the public's discretion in spite of their authorization by a patent from the king, subsequent support from London officials and the stipulation that the coins could circulate as current money. In presenting these two perspectives, it would appear that Breen's interpretation of its intended symbolism, which was purely speculative, was too obtuse to be understood by such an astute observer as Franklin. This is not to say that Franklin presented a more accurate explanation. Rather, it offers a point of view of the symbolic meaning of the rose on the reverse of Wood's coins as seen from the perspective of colonists, an American association that has not been discussed by numismatists.

Colonial copper mining

Connecting the rose as a provenance mark with the copper industry is the relevance of mining in colonial America. When the first explorers arrived in North America, one of their frequent comments concerned the manner of dress among the various Indians they encountered. The use of wampum or cut and polished seashells was noted as a common form of ornamentation followed by the use of copper to make various pieces of jewelry. As a matter of trade, Europeans introduced copper wire and plate that Indians used to augment their hammer-struck pieces of unrefined ore taken from the ground and shaped into various objects. Among the expectations of early settlers and their European sponsors and investors was the hope that silver and gold would be discovered as had occurred in the Spanish colonies that enabled Spain to become the richest nation in Europe. This sentiment was expressed in such early royal charters as that granting the investors in the Virginia Company the right to exploit the natural resources of the New World for England's benefit.

Copper mines were established at various colonial sites in the 1600s although none proved profitable or long lasting. For several years in the mid-1600s, a copper mine operated in Massachusetts and the Dutch during the same period attempted to develop one in the Delaware Gap area when they controlled the Mid-Atlantic region. One potential source of copper lay in northwestern New York. Knowledge of copper deposits in this remote region dated from the 1680s although the exact location remained a secret for many years thereafter due to the fear among Indians that if they revealed the site they would die. In the ensuing years, the location of the mines was discovered and some officials believed that if the mines could be successfully exploited, the copper could be shipped to England as a means to lessen the nation's reliance upon imported copper from the continent and assist the

development of England's emerging metal industry. The French were also aware of the possibilities of utilizing the copper mines of northwestern New York, but came to the realization that it was impractical to ship the ore to Montreal. The same problem faced Hunter in his desire to tap the copper deposits of the region, rendering a mining venture unprofitable until more than a century later when the construction of the Erie Canal and subsequent railroads made the venture at this far distance from the seacoast more practical.

By the time Wood contemplated becoming a moneyer, there were three notable copper mines in the American Plantations: a mining operation in the Caribbean in Jamaica where Wood may have had a vested interest along with the involvement of his son, William, as a manager in the early 1720s; the prolific Schuyler Mine in New Jersey that according to legend was discovered by a slave who found a greenish stone that was sent to England to be analyzed and reported to be rich in copper that led in 1715 to the establishment of a mine by Arent J. Schuyler, the son of a wealthy family in Albany, New York, who was employed as an interpreter and agent among the Indians by New York at a time when New York governed New Jersey; and the smaller Copper Hill Mine in Connecticut that had the highest content of copper in its ore until the Higley Mine was developed in the 1730s.[61]

As a sample of the potentiality of a New Jersey copper mining enterprise, a shipment of ore was sent to England in 1715 whereupon Governor Robert Hunter proposed that it be utilized to make coins for New Jersey and New York to address a deficiency that was viewed as an impediment to the region's economic growth. The timing was seen as potentially optimistic for this proposal since, after years of failure to issue regal coppers during Anne's reign, England was again experiencing a shortage of small change and George I was contemplating the issuance of farthings and halfpence. In his proposal, Hunter outlined his views on the state of monetary affairs in the region:

> …There is one hardship which I have observed ever since I came into this country, which fall chiefly upon the poorer sorts; that is that there being no currency but of silver and bills of credit, the smallest of which is of two shillings, they have not the same relief from the ordinary markets as in other places; for this there is an easy remedy, if his Majesty would be pleased to grant it, there being a Copper mine here brought to perfection, as you may find by the Custom house books at Bristol, where there was imported from this place about a Tonn in the Month of July or August last, of which copper farthings may be coyned, to answer their ordinary uses….[62]

Mining operations in the colonies are exemplified by activities at the Copper Hill Mine located in Simsbury, Connecticut. Incorporated in 1670, Simsbury was abandoned in 1676 due to the threat of attack from Indians during the King Philip's War that caused havoc along the frontier. Although their town was burnt to the ground, residents returned at the conclusion of hostilities and began rebuilding their homes in 1677. During these early years, residents observed local Indians wearing various copper ornaments derived from streaks of copper from which the ore was hammered into beads and other ornaments. In the late 1600s, a "crude" effort was made at mining copper. It was not until 1705 that marketable copper was discovered on unclaimed land on which the town established a mine. Residents of Simsbury

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61. Harry B. Weiss and Grace M. Weiss, *The Old Copper Mines of New Jersey* (Trenton: New Jersey, 1963), pp. 5, 8, 26; Herbert A. Silberman, "The New Jersey Story: From My Point of View" *The Colonial Newsletter* (July, 1995), pp. 1582, 1584.

62. E. B. O'Callaghan (ed.), *Documents relative to the Colonial History of the State of New-York* (Albany, 1853), vol. V, pp. 399, 461-62 and vol. IX, p. 344; Elizabeth Marting, "Arent Schuyler and his Copper Mine" *Proceedings of the New Jersey Historical Society* (April, 1947), pp. 128-29.

participated in the venture as proprietors, forming an Association of Shareholders. In 1709, a law was enacted that stipulated that each shareholder had a responsibility to provide services to the enterprise as well as make payments to improve operations, stipulating that if any shareholder neglected their duty other shareholders could perform the necessary task and charge the neglectful party four times the cost thereof. Thereafter, disputes arose among residents concerning what constituted each individual's fair share in the venture, leading to the appointment of a committee of residents to negotiate the assignment of mining rights to others. In 1712, the land was leased for a term of 30 years to Jonathan Belcher, a merchant and governor of New Jersey and future governor of the Bay Colony and New Hampshire; to Rev. Timothy Woodbridge, Simsbury's minister from 1712 to 1742; and to William Partridge of Newbury, Massachusetts, Belcher's father-in-law. In addition to mining, the lease granted the operators the right to refine copper ore. Taking advantage of this opportunity, Belcher in 1715 went to England and purchased the necessary equipment to build a semi-refiner in Boston to further the processing of ore prior to its shipment to Bristol, England. In support of his venture, Belcher referred to his copper as superior to all then mined in the colonies due to the higher content of copper in the ore extracted from his mine although the mines in New Jersey produced the greater part of the copper ore shipped to England.[63]

Of all the mining operations in the colonies, the facilities at Copper Hill were the most advanced. In addition to the semi-refinery in Boston, the investors made improvements at the Connecticut site throughout the 1720s, including the establishment of a small smelter that was operated mainly by men from Germany who established a residential area called Hanover. During this period of expansion, colonial officials were concerned that mine owners might defer investments or neglect improvements since the industry was prone to controversy among partners and between owners and their workers. In an attempt to lessen misunderstandings, legislators attempted to regulate operations in the following manner:

> …a meeting of the proprietors of the said mine, to be held within the said town on the third Tuesday of April…to choose a clerk…to register the acts, votes, deeds and agreements of the said proprietors…or the major part of them…to direct the work that shall be done, the proportion of money to be levied, the men that shall be employed…for the management and improvement of the said copper mine to be the best advantage of the said proprietors as well as of the publick weal…if any of the proprietors…shall at any time neglect or refuse to improve and carry on his or their part…then it shall be in the power of the said proprietors, or the majority part of them…shall see cause, to enter upon and improve the part or proportion of the said copper mine and all things touching the same, belonging to the person so neglecting…till from the profits thereof he or they shall be repaid fourfold all the charge and expense he or they shall be at in managing and carrying on the said part…And all sheriffs and other inferiour officers are hereby to give their attendance upon the commissioners, to execute and fulfill their precepts and writs, and yield all other obedience to their lawful commands….[64]

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63. John E. Ellsworth, *Simsbury: Being a Brief Historical Sketch of Ancient and Modern Simsbury, 1642-1925* (Hartford, 1925), pp. 17, 25, 27, 30-31, 42; Lucius I. Barber, *A Record and Documentary History of Simsbury* (Simsbury, 1931), pp. 196-97; Creel Richardson, *History of the Simsbury Copper Mines* (unpublished manuscript at the Connecticut Historical Society, 1929), pp. 3, 15, 34, 38, 41, 46-53; J. Hammond Trumbull (ed.), *The Public Records of the Colony of Connecticut* (Hartford, 1850), vol. VI, pp. 84-87, 104-5; Connecticut Archives, *Industry*, vol. I, p. 271; William G. Domonell, *Newgate: From Copper Mine to State Prison* (Simsbury, 1998), p. 9; Richard H. Phelps, *Newgate of Connecticut* (Hartford, 1891), p. 15.

64. Trumbull, (above, n. 63), p. 371.

While the colonial metal industry was slowly developing in the early eighteenth century, the important role of America's raw materials was to serve England's economic interests under the tenets of mercantilism. The aim of this doctrine was to enrich England by means of three basic goals: to satisfy England's domestic consumption of colonial commodities and lessen the outflow of money to Europe for such goods; to obtain products from America that could be sold in Europe, generating a flow of money into England; and to create a market in the colonies for the import of English merchandise that would be purchased with the income earned from raw materials shipped home. In furtherance of this economic principle, England instituted policies to control the colonial economy through various regulations generically referenced as the Navigation Acts that were formulized starting in 1651 when Cromwell declared that all goods, imported into or exported from England, had to be carried in English ships; and that foreign merchandise could only be imported on vessels sailing directly from the country of origin. The intent was to dampen Holland's growing entrepôt trade, a role that England desired to play as middleman for trade with her colonies. Upon the restoration of the monarchy, Charles II issued the Navigation Act of 1660 that reconfirmed the prior concept of promoting England's mercantile interests, requiring further that all merchant vessels be British built, owned, and manned; and issued a list of items, "enumerated goods," that colonists could only export to England or its dependencies. Three years later, England mandated that all European goods leaving the continent for the colonies had to be re-exported through English warehouses, thereby making European merchandise more costly and less competitive than domestically produced goods. The extent of England's drive to protect its domestic businesses at the expense of the colonies was eventually extended to restricting various American manufacturing enterprises. Of relevance was the passage in 1750 of the Iron Act that prohibited any future construction of mills, forges and furnaces in America, thereby supporting the development of England's metal industry. In all such endeavors, the primary goal was to keep the colonies dependent upon England for manufactured goods according to the principles of mercantilism.[65]

While the Navigation Acts in principle restricted the growth of the colonial copper industry, the problem with copper mining in colonial America was the small profit derived from the enterprise. Further, affordable sheet copper was readily available from England. As a result, there existed only a limited local demand for copper ore mined in the colonies where consumption was estimated at ten tons a year. This contrasts with the 1,386 tons of ore sent to England in 1731 from the Schuyler Mine that produced 100 tons of copper. The establishment of the first rolling mill in America did not occur until 1801 when Paul Revere undertook the venture in Canton, Massachusetts, overcoming the lack of prior incentives to develop an American manufacturing enterprise.[66]

Since Bristol played a key role in processing copper ore from New Jersey and Connecticut, Wood was obviously aware of mining activities in the American colonies. Given his desire to encourage the development of England's metal industry as a means to lessen the nation's dependency upon European imports, the rose as a provenance mark that promoted the emerging industrial importance of western England also had an association with mining activities in the colonies. In this context, the use of the rose as a central device on the Rosa Americana coinage could serve a twofold purpose: promoting as a provenance mark the mining and industrial activities of western England; and noting the role the region played in refining colonial copper ore.

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65. Wesley F. Craven, *The Colonies in Transition: 1660-1713* (New York, 1968), pp. 33-39; Oscar T. Black, Jr. and Hugh T. Lefter, *Colonial America* (New York, 1968), pp. 135, 142, 144-47, 216, 232-34.

66. Philip L. Mossman, *Money of the American Colonies and Confederation* (New York, 1993), pp. 247-48; Richardson, (above, n. 63), p. 46.

Summary

While Franklin's commentary on the Rosa Americana series offers an interesting colonial perspective that numismatists should take note of, Wood in selecting the design for the reverse of his coins for the American Plantations would have focused on an element that had relevance to him given his wide latitude in the matter. Although there is no known record regarding Wood's intent in selecting a Tudor stylized rose as a prominent central device on the coinage, it is possible to establish a premise derived from the various aspects of his life that contributed to his role as a moneyer for the colonies. Based on this evidence, there are four factors that are germane to his decision in selecting a rose as a significant feature on his coinage:

(1) The use of the rose as a provenance mark, especially during the reign of George I when it appeared so frequently on regal money as a symbol to promote the metal industry of western England, held significance to Wood as an ironmonger, which is central to understanding why he became a moneyer in the first place.

(2) The use of the rose as a mintmark historically associated with London would have held relevance to Wood since he established his minting operations in the city's Seven Dials district along with this mintmark's historic affiliation with regal money and the special status Wood's tokens enjoyed as stipulated in the patent where the coins were to pass as "money of Great Britain" which was a privilege the monarchy did not grant to other patentees.

(3) The connection between the rose and "Quaker's Money" along with its association with Wood's affiliation with Quakers and their business philosophy of fairness undoubtedly offered the additional benefit of conveying a sense that the new coinage had fair or intrinsic value as a medium of exchange as a means to assist the acceptance of an otherwise unusual coinage.

(4) The recognition of the role played by western England in processing colonial copper ore; and, as a provenance mark, connecting England's metal industry with colonial interests in freeing the nation from its dependence on European imports, which was the hallmark of British mercantilism, an economic policy endorsed by Wood.

While the above factors are speculative in explaining Wood's use of a rose on his coins, it is reasonable to assume that the patentee was attracted to one or more of these concepts. He certainly could not use a nationalistic symbol on colonial money as he employed on his Hibernia farthings and halfpence since the colonies were never viewed as a separate political entity as Ireland had been for centuries. It is also doubtful that he was attempting to make a political statement by employing a Tudor rose to create an obscure linkage between George I and the Tudors, for such a connection was too obtuse to have much relevance to American colonists and possibly even to Wood. As a projector or promoter of his business interests that was the guiding factor in his life, he would have been inclined to use a symbol that promoted his interests as an ironmonger. With this consideration in mind, the rose as a provenance mark that promoted the metal industry of western England has relevance. Obviously, all these factors were lost on Franklin who saw the illustration as the sweet and profitable American Rose that flowered in colonial gardens and was so familiar to him.

As with any research effort, especially one where the original purpose is unknown, the researcher is left with speculation as to Wood's intent. Given this consideration, the purpose of this article is to offer insight into symbols relevant to Wood as he was contemplating a design for the reverse of his American coinage. Since the patent granted him wide latitude in the matter, and there was no clearly defined symbol that was applicable to England's

diverse possessions across the Atlantic that extended from the Caribbean islands to the western frontier and north to French Canada, Wood probably focused on a design that had more relevance to him than to the colonies. My comments herein, therefore, establish a historic framework in which Wood the ironmonger, projector and moneyer formed a decision concerning the design of his coinage for the American Plantations. It is hoped that this article will stimulate further research and consideration in the matter as is needed for any unresolved topic. CNL

A Second Errata to
Money of the American Colonies and Confederation

by
Philip L. Mossman, M.D.; Bangor, ME

In 1997, I had allowed the dust to settle for four years before publishing the list of errors, or errata, that had been discovered in my book, *Money of the American Colonies and Confederation*, published by the American Numismatic Society in 1993. Several misprints and a few frank mistakes in content were corrected in *The Colonial Newsletter*, No. 106, December 1997, pp. 1765-66. Eight more years have now elapsed, or rather flown by; the book is out of print, and, a second, enlarged edition is on the drawing board. However, I think it is important to call to the attention of readers of my 1993 opus that a few more *faux pas* have come to light. In my 1997 errata, I quoted a couplet used by Sylvester Crosby in his 1875 classic work, which he in turn had borrowed from its original author, Alexander Pope. This verse deserves the subtitle, "A Proofreader's Disclaimer."

Whoever thinks a faultless piece to see,
Thinks what ne'er was, nor is, nor e'er shall be

Again I say my second list of "faults" really proves that Pope's little verse contains "more truth than poetry!" This second errata also points out the fact that it is very difficult for an author to accurately proofread his/her own manuscript.

This errata is arranged in two sections: the first lists items of a factual nature that need change or further amplification, while the second deals with typos, actual misspellings, or missing hyphens. In regard to the aberrant orthography, I hasten to add as an explanation, and not an excuse, that I did not have access to an adequate spell-checker when portions of this manuscript were first typed in the early 1980s.

The second part of this paper is not an errata but an emendation which contains tables updated from the original Appendix II, listing many previously unreported varieties of host coins, identified since 1993, over which coppers of the Confederation period were struck.

And lastly, I'll refer the readers to the book's original blue dust cover which depicted a very high-grade 1775 counterfeit George III halfpenny. This image appeared in 1993 without any comment since the jacket was printed after the book itself. In recent years, several fellow numismatists have undertaken the Herculean task of classifying this enormous, interesting series of bogus English coppers according to their individual characteristics. As a matter of curiosity, I consulted these colleagues asking if they could identify the genus to which my cover coin belonged. Their consensus was that this particular coin demonstrated stylistic characteristics common to no less than six different groups but, based on their current taxonomy, opined that it most closely fit the "Wedge-Topped Sevens" family. So for the present, this cover coin remains an orphan with several uncles!

Section One: Factual Errors

[NEW] = Not included in the 1997 errata list.

p. 67, footnote 141: [NEW] This footnote refers to the New Testament mite (Mark 12:42) as a half-farthing in accordance with *Webster's Unabridged Dictionary*. The definition further defines the mite as "a unit of value in England about 1600 worth usually 1/24th penny." Oliver D. Hoover pointed out to me that neither the "mite" nor the "farthing" were Biblical coins; these more recent denominations were used by the translators of the *King James Bible* as the rough English equivalents of the ancient coins which in the original Greek text were the Greco-Roman *lepton* and *quadrans*, respectively.

p. 72, Fig.14 (e): [Corrected page number.] John Kleeberg has since confirmed this "half-joe" to be a very well made contemporary struck counterfeit.

p. 73, Table 8, line 8: [NEW] The French crown is more properly called, *Écu aux huit L*. rather than *deux L*. In each quadrant of the reverse shield there are two letter Ls, or eight in total, hence the name. This coin (Ciani 2212) figured prominently in "Money of the 14th Colony," *CNL-124*, p. 2549, and is pictured in Figure 5, p. 2550.

p. 79, 2nd line from bottom: [NEW] The English shilling weighed 92.9 grains, not 92.6. This accounts for the calculation error on that line that represented a 22.5% overvaluation, not 22.25%. The value, 92.9 grains, is correctly stated in Table 8, p. 73.

p. 106, line 9: [NEW] Delete the phrase "one farthing required sixteen times the labor and time to mint as that expended on a silver penny." This was a misinterpretation on my part. The complete sentence should read; "There existed the need for smaller coins but these could not be minted in sufficient numbers to satisfy the needs of commerce since lower denominational coins were uneconomical to make because of their diminutive size; four silver farthings, together worth a penny, required four times the labor and time to produce the same value represented by a single silver penny."

p. 116, Fig. 32 (c): This piece from my own collection, found in a "junk box," is obviously *cast* and not struck. My initial reaction was that it must be struck since shortly after I found this piece, a second, almost identical copper, surfaced in another non-collector accumulation in the same area. The defect above King George's head, originally thought to be a break in crudely made dies, is obviously the casting port. It is now evident that these two coppers were cast from the same or very similar mold. The occurrence of two similar cast specimens raises the question which can never be proven, "*were these of local manufacture?*"

p. 117, 2nd line from bottom: [NEW] A computational problem: the original reference stated that in a bag containing £6 in halfpence, there were found 36 shillings worth of counterfeits. If the pounds and shillings cited were in sterling, this would calculate to 864 false coins out of a total of 2880 halfpence (6x20x24=2880). My first error is that my finger slipped and I said 884, rather than 864 (36x24=864). But on reconsideration, the £6 was no doubt in New York currency; in 1753, the exchange rate for English halfpence to New York money of account was 14 coppers (meaning halfpence) to the shilling.[1] Based on those figures, we now have 504 (14x36=504) counterfeit halfpence out of a grand total of 1680 (6x20x14=1680). In any case, the bag contained 30% counterfeits.

1 Sylvester S. Crosby, *The Early Coins of America* (Boston, 1875), p. 291.

p. 118, Table 18, note "a": [NEW] The first sentence of this notation is incorrect where I said "d" and it should have been the number of halfpence. "In 1750, the halfpenny was overvalued in New York by 1½ halfpence (0.75d), and undervalued in Pennsylvania by 0.6 halfpenny (0.3d), or a 2.1 (1.05d) halfpence differential."

p. 124, line 4: [NEW] Production of the patent farthings did not cease in 1642, as stated, but rather in December 1644. (C. Wilson Peck, *English Copper, Tin and Bronze Coins in the British Museum*, 2nd ed., p. 48.)

p. 128, line 29 to end; p, 129, line 1: [NEW] Recently there has been renewed interest in the enigmatic St. Patrick coinage involving intensive reexamination of the coins themselves, as well as sleuthing for previously unreported documentary evidence in an attempt to elucidate their obscure origins. An inquiry from Roger Siboni questioned an idea I first developed prior to 1986 about circulation of these coppers in West Jersey. When I revisited the subject I found, indeed, that my earlier report was inaccurate; hence, I will partially reopen this St. Patrick's "can of worms" to correct my misconception. The other research to which I alluded is still in the developmental phase and not the subject of this present dialogue.

Crosby[2] cited the original legislative authorization for Mark Newbie's coppers to pass in the Province of West Jersey; *viz*. they were "to pass for half-pence Current pay of this Province…" and that "…the said Mark, his Executors and Administrators, shall and will change the said half-pence for pay Equivalent, upon demand… ." Additional information tells us that when Newbie died in 1682, his heirs were required to redeem the coppers for £30.[3] Now the question arises: considering that there were at least £30 in halfpence, how many coppers were originally placed in circulation? Sounds simple? - well obviously not for me because I got it wrong!

Coppers in British North America passed in commerce according to two different mechanisms of exchange. The first has been well summarized by Eric Newman in his article, "1764 Broadside Located Covering Circulation of English Halfpence and Farthings in New England"[4] in which he reproduced a table of exchange showing how English halfpence, or "coppers" as they were called, both regal and counterfeit, passed in terms of Lawful money at 18 coppers to the New England shilling of account. The number 18 was derived from the relative value of the monetary standard, the Spanish-American eight reales between England and New England that was set at 100.00:133.33.

Assuming that the St. Patrick coppers would trade at the above ratio (the West Jersey rate was at the same as New England's[5]) I calculated that £30 in West Jersey would account for 10,800 coins. But the system described above did not apply in this particular situation. By the second

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2 *Early Coins of America*, p. 135.

3 David D. Gladfelter, "Mark Newby: Quaker Pioneer," *The Colonial Newsletter* (Dec. 1989) pp. 1124-25. This is an excellent review article and is recommended in its entirety.

4 *The Colonial Newsletter*, #100 (July 1995), pp. 1531-33. Also see Chapter 10, "American Circulation of English and Bungtown Halfpence," in *Studies on Money in Early America*, by Eric P. Newman, editor and Richard G. Doty, associate editor (American Numismatic Society, 1976).

5 West Jersey was in the economic orbit of Philadelphia and followed their exchange rates. Although the standard eight reales passed the same in Pennsylvania as in New England, there is indication that a few years later, in 1698, because of a severe shortage of small change in Philadelphia, genuine coppers passed at double their English rate, or 12 halfpence to the local shilling (Harrold E. Gillingham, *Counterfeiting in Colonial Pennsylvania*, Numismatic Notes and Monographs No. 86 [American Numismatic Society, 1939] pp. 6-7). The exchange rate for 1682 is not specified but since the West Jersey coppers passed according to a legislative edict, this exchange rate is not really relevant for St. Patrick coppers which were pegged to money of account.

mechanism, the St. Patricks were authorized by the West Jersey Assembly to pass at local money of account meaning 24 halfpence to the West Jersey shilling.

This question was referred to John J. McCusker, Ewing Halsell Distinguished Professor of American History and Professor of Economics at Trinity University, who is an authority on early American exchange and a valuable resource for such questions.[6] He replied to my question, "To begin, people always used/use their local money of account unless they made/make it very clear otherwise. … I have rarely come across an instance in the colonial period where it is unclear what pound money currency people meant. Thus, in the case to which you refer, when the legislature stated 'Current pay of this province,' it was stating that each copper was to pass at the rate of one half-penny West Jersey currency. … More importantly for your purposes, with twelve pence to the shilling (everywhere), and twenty shilling to the pound (everywhere), there were 480 half-pence to a pound. Thirty pounds worth of half-pence comes to 14,400 coppers. I know of no instance in which this basic relationship of one accounting unit to another was breached."

So these newly authorized Irish coppers did not pass like all other foreign coins according to the exchange rates established by the colonial legislatures for English halfpence (and by necessity counterfeits which were accepted "without discrimination"[7]); instead, Mark Newbie's coppers passed at local money of account at 24 to the shilling as outlined in the authorization as quoted by Crosby. Historically the Massachusetts and Baltimore silver also passed at local money of account.

p. 129, Table 14: [NEW] I must recalculate my cost studies for the St. Patrick coinage based on new knowledge from the research of Brian Danforth (*CNL-121*, pp. 2371-2402): [1] the coins were made in London not Ireland and [2] I found my copper costs have been revised upwards by Challis (*A New History of the Royal Mint*, pp.365-69) who has written that Peck's production cost for 1672, which I used in 1993, were too low. I will now use the revised total cost of 18.25d, derived above.

	Large St. Patrick	Small coins as ¼ d	Small coins as ½ d
1. Observed weight	**135.7**	**92.3**	**92.3**
2. Coins/lb	**51.6**	**75.8**	**75.8**
3. Irish value d/lb	25.8d	19.0d	37.9d
4. English mint costs/lb	**18.25d** [19.25]	**18.25d** [19.25]	**18.25d** [19.25]
5. Profit: value-cost	6.55d	(-0.25d)	18.65d
6. % Profit/total cost	34.0%	(-1.3%)	96.9%

Explanation of new table: In the table, the money values in normal type represent Irish currency, while the bold type values are their equivalents in English sterling. Since these Irish coins were made in England, we have to use English costs, converted into Irish, and then examine the Irish monetary values to derive profit or loss. Since the coins were minted in England where expenses were incurred in sterling, Row 4 shows the revised mint costs of 18.25d, English, or 19.25d, Irish, at an exchange rate of 105.56:100.00.

6 Personal communication, January 15, 2006.

7 Crosby, *Early Coins of America*, p. 291.

Rows 5 & 6: If the small St Patrick coins were minted as farthings, they would have incurred a loss of 1.3%. The breakeven point would be total mint costs at 18.0d (17.999d), English.

Examining the economics, if the small St. Patrick's coins were minted as a smaller variety of halfpence, as I contend, there would have been a handsome profit. The cost to transport the coins from London to Dublin is still an unknown expense factor. As I originally said, if you break with tradition and consider the small St. Patricks as smaller halfpence [no matter what they might have been or were considered later], everything else fits into place. In my opinion, this is why the New Jersey act speaks only of halfpence and why the small St. Patrick coppers have been the only ones recovered. To date, I have traced ten small ones but not a single large St. Patrick copper, earlier literary reports notwithstanding.

p. 131, line 18: Dean Swift wrote seven, not four, Drapier's Letter regarding his position relative to Wood's Coppers. I found another valuable reference, *The Drapier's Letters to the People of Ireland against receiving Wood's Halfpence*, edited by Herbert Davis (London, 1935, reprint 1965).

p. 134, 2nd full paragraph: [NEW] In 1993, I had found nothing but anecdotal statements supporting the circulation of Wood's Hibernia coppers in British North America – no positive proof but only unsubstantiated personal observations, such as the catch-all phrase, "found in non-collector accumulations." I concluded my comments (p. 135, top) with: "The nagging questions as to the currency of Wood's Hibernias coinages in America cannot be satisfactorily resolved until there is some further literary or hoard evidence."

I accepted my own challenge. Imagine my delight when, in 1998, I personally examined at the Maine State Museum the 18 Wood's examples recovered from the Pemaquid site! In my paper, "The Circulation of Irish Coinage in Pre-Federal America," (*CNL-110*, pp. 1895-1917). I reviewed the accumulating evidence that these coins did play an important role in early America. In *CNL-113* (p. 2064-65), I published a map indicating the location of 90 recoveries of Wood's coppers from several archeological and metal detection sites, some of which were date-sensitive. This number of finds has now been expanded (as of December 8, 2005) to 145 halfpence and 10 farthings scattered from Nova Scotia to Virginia. Literary documentation was next reported by Brian Danforth in his article, "Wood's Hibernia Coins Come to America" (*CNL-117*, pp. 2213-30) in which he confirmed the importation of the coins to the mid-1730s. This timeframe, advanced by Danforth, has been substantiated by the physical evidence surrounding some of the recovered examples, especially the Pemaquid, Maine, colony that dissolved in 1733. I can now conclude that hearsay evidence of the past has been positively confirmed. That's what research is all about!

p. 138: Several more coinage proposals for the American Colonies are summarized in Nettles, *Money Supply*, pp. 174-77.

p. 139, Fig. 42 (a): In his study of Higley coppers, Dan Freidus observed that this piece, donated many years ago to the ANS, is not genuine. He comments, "*It is so different from any other specimen that I cannot imagine that it was intended for collectors. My best guess would be that it is either a contemporary counterfeit (engraved or struck from hand-engraved dies?) or a later fantasy, not really intended to deceive. I lean a bit towards the former, but in that case doubt that it was struck, since making dies would have been a significant feat in the 1730s or 40s.*"

p. 147, note 9: It was in June 1775, not 1776, that Congress discarded the English currency denominations. I should add, that in spite of this action by Congress, the use of pounds, shillings and pence continued well into the next century; "old habits die hard."

p. 150, line 28: The date of the *London Gazette* was December 21, 1776, not the 2nd.

p. 158, note 64: A *liard* was the smallest French copper of the period of which there were four to one *sou*.

p. 164: The first sentence of the second paragraph is in error. It should read, *"The completed die is a mirror image of the final design on the struck coin, the die being a negative and the finished coin a positive representation."* Although the completed die is negative, the mistake is that the punches and hubs used to sink the die are *positive*, just as is the final struck coin. Embossing, or raising a design, describes the action of a die on the planchet and is incorrectly applied to a punch which sinks, or debosses, an image into the working, or embossing, die. As noted in the Breen reference, state coppers were struck from working dies (negative image) whose designs were sunk by positive device puncheons while the numbers and letters were added by individual punches. From one stage of manufacture to the next, the image alternates from negative to positive. Cooper's observation (*Coinmaking*, p. 161-62) about punches and dies clarifies this topic further.

> Striking punches from matrices, and dies from punches, involved much heavier blows than those needed for striking the coins of the same design. The heaviest presses available were used for this operation. ... The steel die blank needed two or three times the force required for striking a coin of similar size, and all but the very smallest dies were struck with a number of blows. Also it was more difficult to strike the positive punch from the negative matrix than the negative die from the punch. (It is easier to drive the upstanding positive design down into the surface of the die blank than to force metal up into the incuse negative design).

The last two sentences explain why intricate letter punches raised from master matrices are so frequently defective and fragile. The "broken A" punch is a well-known example of this.

p. 179, line 15: [NEW] Read 200, 000 for 300,000. There were three million New Jersey coppers authorized by the legislature to be minted of which one-third was allocated to Mould and the remainder assigned to the Goadsby and Cox partnership. If the minters were required to pay 10% to the state treasury, then Goadsby and Cox were only responsible for a royalty of 200,000 coppers. (Thanks to Ray Williams for this notation. He pointed this out to me in a letter of October 6, 1994, which I misfiled and recently found. Better late than never!)

p. 193, bottom: [NEW] "The Constellatio Nova Coppers." Following the suggestion of Walter Breen appearing in *CNL-41*, pp. 453-55, the word order, *Constellatio Nova*, gained credibility as the acceptable designation for this series of private coppers. He advanced his thesis based on the position of the words within the reverse legend in relationship to the central eye and further proposed that the new syntax was better Latin. This evidence was thoroughly reviewed by Louis Jordan, both a numismatic researcher and Latin scholar, in *CNL-115*, pp. 2127-63. Jordan's conclusion was that "the word order on the original Morris pattern units was intended to be and understood as NOVA CONSTELLATIO." However the position of the central devices on the private copper series was modified and hence the properly oriented legend, based on the central images, is CONSTELLATIO NOVA. Based on this carefully done analysis, but at the risk of breaking with tradition, I'll continue the CONSTELLATIO NOVA format. I would recommend Jordan's excellent summary.

p. 198, line 20: Regarding the *Georgius Triumpho* copper, there is no evidence that it circulated in the southern United States or the West Indies. Its occurrence as a host coin for New Jersey coppers should be further substantiated. See George Fuld, "Coinage Featuring George Washington," *Coinage of the Americas Conference, Proceedings No. 11*, October 28, 1995 (New York, 1996). A *Georgius Triumpho* copper undertype has been verified recently on a New Jersey Maris 73-aa (See Appendix 2).

p. 199, under "Silver Coinages," line 13: [NEW] In this section I noted an analysis we did of Chalmers's coins with Dispersive X-ray Fluorescence Spectrometry revealed an 81 to 86% silver content with a ±6% error. I drew the wrong conclusion and interpreted this value as indicative that Chalmers diluted the near sterling content of the Spanish-American silver for additional profit for the coins he minted. John Kraljevich pointed out the fact in a 2003 COAC presentation that this 81 to 86% assay agrees completely with the content of Spanish pistareens, a prominent coin in Maryland (MD) during this era. So Chalmers did not melt Spanish-American coins but rather used mainland Spanish coins whose content in several old assays varied from 80.2 to 84.2% silver.

Another very important point was that these old pistareens had been circulating for many years and were well worn and perhaps clipped; without doubt they were less than their authorized mint weights. This fact is evident in Samuel Sower's 1793 table from Philadelphia where he listed the standard weight of the pistareen as "3 dwts 11 gr" (83 grains) whereas the authorized weight was 94.6, implying that the average pistareen had lost up to 12.3% of its original weight due to the ravages of circulation. So the lesson learned here is that theoretical mint weights are no longer applicable for circulating coins and it is necessary to consult the prevailing market values. Sower also quoted the current rate for pistareens in "Sterling Money of Great Britain" at 10¾d and in Maryland money at 1s 6d (18d).[8]

There are three assumptions regarding the chart below and the calculated results: that the assay we did (81 to 86%) is representative of the entire population of shillings; that Chalmers used cross pistareens at .8333 fine, averaging 83 grains, but this can only be inferred; that the average weight of his shillings is 54.0 grains, a figure based on our sample of 22 examples.

8 The same value for pistareens in Maryland money of account was given in Nicholas Pike's 1786 table from Massachusetts but he did not give a standard weight. However, Pike did cite the standard weight for the Spanish-American milled dollar passing for 90d. in Maryland as 409¾ grains, quite a reduction from its original 417.6 grains mint weight. This table can be found in *Money*, p. 157.

Coin	Value	Standard Weight	Fine Silver	Authorized
Pistareen in London, 1793	10.75d sterling	83.0 grains .8333 silver	69.2 grains fine	94.6 grains .8333 silver
Pistareen in Maryland, 1793	18d money of account	83.0 grains .8333 silver	69.2 grains fine	94.6 grains .8333 silver
MD shilling of account	12d money of account	55.3 grains .8333 silver	46.1 grains fine	63.0 grains .8333 silver
Chalmers shilling	12d money of account	54.0 grains .8333 silver	45.0 grains fine silver	54.0 grains .8333 silver
Chalmers shilling	***	1.3 grains weak (2.4%)	1.1 grains weak (2.4%)	9.0 grains weak (14.3%)

Coin: The citations for pistareens are Sower's 1793 table.

Value: The citations for pistareens are Sower's 1793 table. The MD money of account is derived from the fact that Spanish-American milled dollar standard passed for 90d or 7½ Maryland shillings per milled dollar standard. (90d ÷ 12d = 7.5)

Standard Weight: The 83 grains per pistareen is the standard for circulating coins as quoted by Sower in 1793. Since cross pistareens were so much more common than the "head" variety, the .8333 fineness is assumed.[9] Also a single assay gives the Chalmers shilling at 81 to 86% which is highly suggestive that he used worn pistareens at .8333 fine as his source of silver, at least for that sample.

Fine Silver: An identical calculation as the previous column but using pure silver content.

Authorized: This quotes the authorized weight for a head pistareen as cited in Table 5, in *Money*, p. 62, and shows that by using full weight mint coins rather than the actual coins as found in the market place, the results are significantly skewed.

Regarding the weakness of the Chalmers shilling, there is a considerable difference if one is dealing with new, mint state coins (column 5) versus those that have been in circulation (column 3). At the given pistareen weight of 83 grains from the commercial tables, each shilling of account contained 55.3 grains of .8333 silver or 4.6 grains per Maryland penny. Considering a 1.3 grains or 2.4% weakness in each Chalmers shilling, this translates to an excess of 2.1d of market value over the intrinsic value of silver per each 90d Spanish milled dollar of 7.5 shillings. Before we can say Chalmers made any profit, we need to know how much he actually paid for the scrap silver as well as the total expenses incurred in minting. John Hull, who 131 years earlier in Massachusetts Bay recoined Spanish-American silver, received 18d, or 7.5%, for every 20s. minted, a far greater seigniorage than Chalmers.[10]

p. 200, Fig. 69 (a): The accompanying illustration is of a "*long worm*" shilling.

9 See Thomas A. Kays, "When Pistareens Cut Their Way Through the Tobacco Colonies," *CNL*, pp. 2189-99 for an excellent review of pistareens in North America. Kays notes that the head pistareens, authorized at .8125 fineness and appearing after 1772, never circulated in the colonies in large numbers (p. 2177).

10 Louis Jordan, *John Hull, The Mint and the Economics of Massachusetts Coinage* (C4, 2002) p. 46. On the same scale, Chalmers would have received 5.6d. per 20 shillings minted. (20 ÷ 7.5 = 2.67 dollars at 7½ shillings each; 2.67 x 2.1d. = 5.6d.) Hull received 18d. for the same value of money minted, of which 15d. was the mintmaster's commission and 3d was for wastage.

p. 203, footnote 1: [NEW] The census of coin varieties is now currently:

Connecticut	355	
New Jersey	142	
Massachusetts	50	
Vermont	39	
Imitation English Halfpence	36	(excludes those counted elsewhere)
Fugio	60	
New York	4	
Domestic Patterns	10	
Domestic counterfeits of Constellatio Novas	2	
	698	

p. 236: In the poem, "The Coppers Done Over," we read in the last line "*b-mf dd-r*"; John Kleeberg has identified this as "bumfodder," or the contemporaneous reference to toilet paper. In the fifth stanza on the next page, "*Conty*" is explained as "Continental," a reference to the worthless Continental currency.

p. 271, Appendix 2, Table 29: [See updated Appendix 2] Under 17-b, it should read *1787 Conn. M 33.2-Z.5* (vice M. 33.2-ZZ.5).

pp. 279-95, Appendix 4: The 26 bar graphs in this section need to be reexamined. The number of bars and the five-grain increments for most (19) of the histogram were originally formulated by inspection of the data. Charles W. Smith pointed out to me Zernicke's rule for establishing the ideal number of "bins" [bars] in a bar graph. This principle states that by multiplying the cube root of the number of specimens in the sample by two, the correct number of bars in the histogram can be calculated so that the shape of the histogram will be statistically accurate. According to that formula, in 21 of the 26 histograms in this appendix, there should have been fewer but wider bars. The problem obviously is the result of the very few specimens at the extremes of the histograms where bins typically contain zero, one or two specimens. Chart 17 is a good example of this where three bins are empty. This histogram has 13 bins at five grain intervals but the formula states there should be only 10 bins of 6.5 grains increments (166-101=65, 65÷10=6.5). If these three left empty bins and the lone specimen in the first bin are ignored, we would be left with ten bins of four grains, and the general shape of the curve unchanged. Although the histograms in the appendix have not been redrawn, it appears that all would comply with the statistical requirement if all bins of zero, one or two specimens were excluded. The omission of these bins would not substantially change the shape of the histograms and the double populations noted in Charts 16, 20, and 24 would not be altered.

p. 305: [NEW] Index for Constellatio Nova patterns is p. 200, not 220.

p. 312: Index for "*sou*" should read, "p. 158 and 158n."

p. 313: Index for "stiver, p. 63" is in error; change to "*stuiver*" pp. 65, 67-68.

Section Two: Spelling Errors

Note: All errors listed below were not included in the 1997 errata list except for pages 18, 46, and 238.

p.17: I apologize to Ivor Noël Hume for not listing his surname properly as Noël Hume and not Hume.

p. 18: I do apologize to Dan M. Lacy, author of *The Meaning of the American Revolution* (New York, 1964), for misspelling his name, Lucy.

p. 44, line 10 from bottom: "presumably" not "presumedly."

p. 46, line 25: "*immigrating*" rather than "*emigrating*" better describes the action of those entering *into* the country.

p. 88, line 20: "approximate" for "appoximate."

p. 95, line 4: "codfish" for "cod fish."

p. 102, line 10: "mercantilist" for "mercantilistic."

p. 107, 2nd line from bottom: please read "21-year."

p. 113, line 12: "red-hot" not "red hot."

p. 117, line 13: the word is "nonnegotiable" not "unnegotiable."

p. 121, line 14: the word is "cast" not "casted."

p. 128, line 19; 129, line 5; Index, p. 309: an embarrassing error, change spelling to "Isle of Man."

p 145, last line: add hyphen for "self-government."

p. 151, line 18: "I" before "e" except after "c," etc.; "siege" for "seige."

p. 152, line 19: here it should be "one-dollar."

p. 155, line 14: add hyphen for "ship-building."

p. 158, line 17: add hyphen for "half-pistareen."

p. 173, line 9 from bottom: the word is "euphemism," not "euphonism."

p. 176, line 25: delete the extra "the."

p. 185, line 4 from bottom: add hyphen for "ready-made."

p. 215, footnote 27: "*post-replevin*."

p. 238, line 26: The corrected spelling of Commonwealth.

p. 239, line 23: remove the extra "t" in "negotiated."

p. 251, line 13: the word is "multifactorial."

p. 258, footnote 25: "Boulton" not "Boultons."

p. 265, line 7 from bottom: again, the word is "nonnegotiable" not "unnegotiable."

Appendix 2 – Summary of Overstruck Coppers: Updated from 1993

Note: Italicized text are new additions since 1993.

Vermont

Varieties are listed by the Ryder-Richardson attribution number followed by the Bressett attribution number. The variety listing is followed by the host coin and reference source.

RR-3 2-B: 1785 Conn. Miller 4.1-F.4 (24)

RR-12 11-K: Nearly always on Constellatio Nova coppers (27); 1785 Constellatio Nova 4-D (15 lot 663), 1785 Constellatio Nova 5-E (p). *(About half o/s on Constellatio Nova coppers [33].)*

RR-14 10-K: Occasionally on Constellatio Nova coppers (27); 1785 Constellatio Nova (2 lot 564).

RR-15 9-I: 1785 Vermont B.3-C/RR-4 (39); George III halfpenny (39);1775 George III halfpenny (39); *unattributable landscape (p).*

RR-18 19-X: Usually on Irish halfpence (27); *counterfeit George II Irish ½d (33)*; 1781 Irish ½d (7 lot 11); *counterfeit 1782 Irish ½d (62)*; 1782 Irish ½d ? counterfeit (15 lot 685); *counterfeit 1776 George III English ½d (33)*; English halfpenny (22), (42 lot 327); an exception is over a Constellatio Nova (43 lot 1284).

RR-25 16-U: All overstruck on counterfeit Irish halfpence when dies removed to Newburgh before dies shattered (27); *Most – not all – overstruck on counterfeit Irish halfpence when dies removed to Newburgh before dies shattered (33)*; (2 lot 570), (26); 1781 counterfeit Irish ½d (8 lot 304), (12 lot 89); 1781 Irish ½d (15 lot 677); *1782 Irish ½d (61)*.

RR-28 21-U: Nearly always on counterfeit Irish halfpence (27); 1781 and 1783 Irish ½d and counterfeit English ½d, including a 1782-dated example; Machin's Mills copper 178? (4 lot 111); *counterfeit Irish 1783 (p)*.

RR-29 22-U: Occasionally on Irish halfpence (27). *Rarely overstruck on Irish halfpence – (33).*

RR-32 12-K: Of the few known, most are on Constellatio Nova (41 lot 2092), (33); *1785 Constellatio Nova (33); counterfeit George III ½d (33)*.

RR-33 21-Y: Nearly always on counterfeit Irish halfpence (27); counterfeit English ½d (3), (22).

RR-35 20-X: On counterfeit Irish halfpence (27), with one exception (33).

RR-39 25-U: *1788 Conn. M. 1-I (p)*.

Note: Sources frequently list English or Irish halfpence undertypes without opinion or comment as to whether they are considered genuine or counterfeit. Weight documentation would be helpful to assist in this determination.

References start on page 2981.

Connecticut

The Miller variety attribution is followed by the host coin and reference source.

1787

5-P: 1781 counterfeit Irish halfpenny (44, #779).

33.38-gg.1: 1783 Constellatio Nova 3-C (23).

33.20-Z.9: Scottish bawbee (23).

1788

3-B.1: Always struck over Constellatio Novas (Breen [22]); C. 4-C (13 lot 109); C. 4-D (p); *five exceptions (33)*.

3-B.2: Usually on Constellatio Nova coppers (22); C. 4-C (14 lot 289); C. 5-E (23)(13 lot 110); *3-B.2 has three exceptions not o/s. (33)*.

4.1-B.1: Frequently on Constellatio Nova (22); C. 5-E (23); C. 4-D (9 lot 34).

4.1-K: Occasionally on Constellatio Nova coppers; C. 5-E (23).

4.2-R: Always on Constellatio Nova (18 lot 717); C. 4-D (14 lot 293); *one exception (33)*.

5-B.2: Usually on Constellatio Nova coppers; C. 5-E (14 lot 290).

10-C: Usually on Constellatio Nova coppers; C. 2-A (14 lot 387); C. 4-C (p).

11-G: *Two known on Constellatio Nova (33)*; C. 5-E (p).

12.2-C: Usually on Constellatio Nova; C. 5-E (13 lot 122); C. 2-A or C. 4-C (14 lot 299); Richard Picker recorded a 12.2-C over a 4.2-R over a Constellatio Nova 5-E (29).

16.3-N: Occasionally on counterfeit 1787 Massachusetts cent Crosby 1-B (22); (13 lot 131) (*ten recorded*.)

New Jersey

The Maris variety attribution is followed by the host coin and reference source.

16-d: 1723 French copper (45).

17-J: Usually over Connecticut coppers; Conn. (21), (28).

17-K: Occasionally on Connecticut coppers; 1787 Conn. M. 32.3-X.4 (2 lot 1404); *1787 Nova Eborac, figure facing left (p)*; Machin's Mills 1772 6-72A (21); *177? George III English ½d (60); Irish George III ½d (p)*.

17-b: About half are overstruck and usually on Connecticut coppers; *1781 Irish halfpenny (33)*; 1782 Irish halfpenny (2 lot 1406); *Conn. brockage (59); 1786 Conn. (p)*; 1787 Conn. 24-FF (48); 1787 Conn. 33.2-X.2 (48); 1787 Conn. M. 33.2-ZZ.5 (2 lot 1407); 1787 Conn. 33.7-r.2 (57); *1787 Conn. 44-W.4 (33)*; 1788 Conn. 16.3-N (p); 1774 Louis XVI one sol (2 lot 1408); Nova Eborac (21); Vermont RR-9 (21); Vermont RR-20 (p); 1783 Constellatio Nova (38 lot 1347).

34-J: Nearly half are overstruck, usually on Connecticut coppers; Conn. (21); 1785 Conn. M. 4.1-F.4 (45); *1787 Conn. M. 4-L (p); 1787 Conn. M. 25-m (p); 1787 Conn. M. 30-hh.1 (p)*; 1788 Conn. M. 15.2-P (61); Nova Eborac (21); 1772 English halfpenny (28); *counterfeit Irish ½d (p); Vermont RR-24 (58 lot 472)*.

34-V: Usually overstruck on Connecticut coppers; Conn. (21); New Jersey M. 35-J (28); New Jersey 34-J in turn over a possible Vermont RR-16 (36 lot 207); New Jersey M. 35-J in turn over a Connecticut (56 lot 1356); *on 34-J or 35-J (59)*.

35-J: Occasionally overstruck; Over New Jersey M. 35-W (21); counterfeit English halfpenny (36 lot 209); Constellatio Nova (41 lot 2209); 1787 Conn. (45); *1787 Conn. 32.1-x.3 (61)*.

35-W: Georgius Triumpho copper (21).

40-b: Occasionally overstruck; Conn. coppers (21); Irish ½d (21); 1780 French sou (25).

48-X: *George III ½d (p)*.

56-n: The 56 to 58-n series are almost always overstruck on every description of host coin, about a half of which are Connecticut coppers.

Irish and English halfpence: Irish ½d (28); *1781 Irish ½d (p)*; 1782 Irish ½d (11 lot 42); 1783 Irish (or English) ½d (56 lot 1411); *George I English ½d (p)*; *1733 counterfeit George II ½d (p)*; George II English ½d (21); English ½d (28); *1754 George II cast counterfeit English ½d (62)*; *cast and struck counterfeit English ½d (61); 1772 counterfeit English ½d (62); 1773 English ½d (61); counterfeit 1774 English ½d (p); counterfeit 1775 English ½d (59)*; 1774 English ½d (28).

Constellatio Nova (11 lot 44); 1783 Constellatio Nova C. 3-C (31 lot 595).

Nova Eborac (21); Nova Eborac, Crosby 1 B (46 lot 1416).

Louis XV sol (63 lot 269) *(possible)*

Vermont (Ryder-Richardson attribution): RR-3 (51); *RR-7 (p)*; RR-13 (p); *RR-16 (p)*; RR-16 or 17 (36 lot 231); RR-20 (p); *RR-21 (p); RR-23 (p); RR-24 (p)*; RR-25 (21); *RR-27 (61); RR-29 (p)*; bust right (2 lot 1455).

George Clinton Excelsior copper (64 lot 182).

Machin's Mills imitation halfpence (Vlack attribution): *1747 1-47A (p); 1771 3-71A (61); 1771 3-71B (62); 1772 5-72A (p); 1772 6-72A (62); 1774 3-74A (61)*; 1774 (11 lot 43); 1775 4-75A (21); *1776 6-76A (61); 1787 ? variety (4, lot 195)*; 1787 17-87A (21); 1787 17-87B (21); 1787 18-87C (21); 1787 19-87C (p); *1787 20-87C (p); 1787 21-87D (62)*; 1788 23-88A (21).

1785 Connecticut coppers (Miller attribution): 2-A.4 (55 lot 1321); *4.1-F.4 (p)*.

56-n (continued): *1786 Connecticut coppers (Miller attribution): 5.4-O.1 (p)*.

1787 Connecticut coppers (Miller attribution): 2-B (p); *3-G (62)*; 4-L (21); 6.1-M (49 lot 170); 11.2-K (21); *21-dd (61); 24-g.3 (61)*; 25-m (54 lot 64); *26-a.1 (61); 30-x.1 (61)*; 30-hh.1 (21); 31.1-r.4 (48); *32.1-x.3 (p); 32.2-x.1 (61)*; 32.6-X.6 (14 lot 2100); *33-T (p); 33-Z variety (p)*; 33.2-Z.5 (21); 33.2-Z.12 (21); *33.3-W.1 (p); 33.6-KK (p); 33.7 variety (59); 33.13-Z.1? (p)*; 33.34-Z.11 (21); 37.4-k.1 (57); 37.8-LL (52 lot 5479); *39.1-h.1 (66)*; 42-kk.2 (21); 43.1-Y (48); *45-CC (p)*; 52-G.1 (21); ?53-FF (4 lot 199); 100-I (48).

1788 Connecticut coppers (Miller attribution): 2-D (p); 3-B.1 (46, lot 59); ? 11-G (4 lot 201), *16.1-H.1 (4 lot 383)*; 16.3-N (p); Parmelee Sale (30 lot 428) notes 1785 and 1788 Connecticut coppers.

57-n: 1787 Conn. M. 31.2-r.3 (2 lot 1456); Machin's Mills imitation halfpence or Vermont RR- 31 (50, lot 1633); *Vermont RR-13 (p); counterfeit George III Irish ½d (62)*.

58-n: *1785 Conn. M. 5-F.5 (p)*; Conn. (2 lot 1458); *1786 Conn. M. 4.1-G (p)*; 1787 Conn. M. 1.1-A (48); *1787 Conn. M. 15-F.1 (64 lot 189); 1787 Conn. M. 32.1-x.3 (61); 1787 Conn. 43.1-y (61); 1787 Conn. 43.2-x.4 (59); 1788 Conn. (4 lot 208)*; Vermont (?) (21); Vermont Bressett's obverse 16 (41 lot 2252); *Vermont RR-23 (p); Vermont RR-27 (64 lot 190)*; 1775 English ½d (28); 1775 Machin's Mills ½d V. 4-75A (11, lot 45).

65-u: *1721 English ½d (p)*.

70-x: Counterfeit ½d ? English (21); 1786 Conn. M. 3-D.1 (5 p. 15), (2 lot 1475); 1787 Conn. (56 lot 1436); Machin's Mills V. 6-76A (46 lot 1443).

71-y: Conn. (21); 1787 Conn. draped bust left (41 lot 2276); *1787 Conn. M. 19-g.4 [?] (61)*; 1787 Conn. 32.2-X-1 (50 lot 651); 1788 Conn. M. 5-B.2 (48); 1788 Conn. M. 15-L.1 (56 lot 1438); *1788 Conn. M. 14.2-A.2 (59)*; *Vermont (p); Vermont RR-9 (4 lot 229); Vermont RR-24 (p)*; 1787 Machin's Mills V. 19-87C (21); counterfeit George II English ½d (2 lot 1476); *counterfeit 1775 English ½d (4 lot 228)*.

72-z: 1783 Constellatio Nova 1-A (2 lot 1478); Machin's Mills V. 13-88 CT (p); *1787 Conn. M 14.1-L.2 (p); 1787 Conn. M. 33.3-Z.3 (59)*; 1788 Conn. D reverse (50 lot 1652); *Vermont RR-13 (p)*.

73-aa: Always overstruck on a wide variety of host coppers. Spanish four maravedis (21); 1774 English ½d (28); counterfeit 1774 English ½d (p); counterfeit 1775 English ½d (4 lot 234); *counterfeit English George III ½d (59)*; counterfeit Irish ½d (4 lot 233); Conn. (21); *1787 Conn. (p); 1788 Conn. (p)*; 1787 Conn. M. 10-E (56 lot 1442); 1787 Conn. M. 33.17-r.1 (14 lot 2095) (41 lot 2279); *1787 Conn. M. 33.7-r.2 (p); 1787 Conn. M. 33.9-s.2 (62)*; 1787 Conn. 33.29-gg.1 (48); 1787 Conn. M. 33.37-Z.9 (61); *1787 Conn. M. 37.8-HH (p)*; 1788 Conn. (50 lot 1653), (33); Machin's Mills imitation ½d (1 lot 34); *Vlack 13-88 CT (p)*; Nova Eborac Crosby 1-B (p) and 1-A (50 lot 1653); Vermont (30 lot 440); Vermont RR-14 (34 lot 206); *Vermont RR-20 (p); Georgius Triumpho (p)*.

Note: Sources frequently list English or Irish halfpence undertypes without any opinion or comment as to whether they are considered genuine or counterfeit.

Miscellaneous

Listed by coinage type, host coin and reference source.

Immunis Columbia: 1786 New Jersey (2 lot 605); New Jersey M. 26-S (32 lot 73).
(All large flans): New Jersey M. 26-S.

George Clinton: Immunis Columbia (2 lot 603).

Machin's Mills coppers:
(Vlack 6-76A): Counterfeit brass pistareen of pretender Charles III (1701-14) (35, 53); 1785 Immune Columbia (p).
(Vlack 2-71A): Vlack 8-74A (40).

Nova Eborac:
(Figure seated left): ? 1781 or 1782 Irish halfpence (44 #986).
(Figure seated right): 1783 Constellatio Nova C. 3C. (p);1785 Constellatio Nova (65).

Albany Church Penny: George III halfpence (101.1 grains) (53).

References

p. Private collections – many of these examples have appeared in auction catalogues.
1. MacFarland Sale, Bowers and Ruddy Galleries, Jan. 14-16, 1981.
2. The Garrett Collection Sales, March 26-28, 1987. Bowers and Ruddy Galleries, 1979-1981.
3. John M. Richardson, "The Copper Coins of Vermont," *The Numismatist*, p. 335.
4. Frontenac Sale, Bowers and Merena, Nov. 20-22, 1991.
5. Edward Maris, *The Coins of New Jersey*.
6. Don Taxay, *The Comprehensive Catalogue and Encyclopedia of United States Coins*, *passim*.
7. Allen Collection, Stacks, Feb. 4-5, 1977.
8. Breen III, Pine Tree Auction Galleries, June 19-20, 1978.
9. Bryan Collection, NASCA, Nov. 2, 1977.
10. Hall Estate, Bowers and Ruddy Galleries, Oct. 26-28, 1978.
11. Branigan Estate, Bowers and Ruddy Galleries, Aug. 21-25, 1978.
12. F.U.N. '77, Pine Tree Auction Galleries, Jan. 8, 1977.
13. New Netherlands 51st Sale Catalogue, June 19, 1958.
14. Early American Coppers Convention, Pine Tree Auction Company, March 5-6, 1976.
15. John Carter Brown Sale, Pine Tree Auction Galleries, May 20-21, 1976.
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DIE CLASHING, DIE CAPS, AND BROCKAGES

by
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Introduction

Mint errors were not unusual in the coinages that circulated in pre-Federal America because coining technology was still in its developmental phase during the late eighteenth century. Within the state coppers, many "unintentional deviations" have been recorded in the Connecticut series where several mints, both legal and clandestine, were known to have operated. On the other hand, errors from the state-run second Massachusetts mint are a distinct rarity.[1] The counterfeit English halfpence and farthings which were abundant within the small change medium of North America are frequently found to contain mistakes. This is understandable since they were mass-produced by illegal operators, especially in Birmingham, England. The counterfeiters' motivation was profit and not quality control. Of interest, active counterfeiting of copper coins continued within England in spite of a penalty of two years' imprisonment enacted in 1742, as a means of discouraging their production.[2]

The purpose of this paper is to discuss the formation of an aberrancy found fairly commonly in both modern and pre-Federal coinages – the brockage – and its associated partner – the die cap – which has only been described, to date, in modern coinage. The mechanism responsible for die cap and brockage production will be described, as well as the evaluation of these minting errors in relationship to die clashings.

Die Clashing

Die clashing, a common phenomenon in nearly all the colonial coinages, is relatively rare in modern coinage due to technological improvements. This event occurred when opposing dies were struck together without an interposing planchet between them, realizing that this was before the advent of collars. Since a blank planchet was manually positioned between the dies by the pressman, who then immediately removed the struck coin, it is easy to visualize that if movements of the fly-men operating the screw press, and the seated pressman were ever to become asynchronous, the dies could forcefully impact upon each other without the cushioning effect of the planchet. Thus, "clashed" dies and mutilated fingers were occupational hazards threatening any inattentive pressman. This was a period when automatic planchet feeders were in their developmental phase at many mints; and thus, it is conceivable that clashing could also occur if such an apparatus malfunctioned and no planchet was injected into the system. (There are other planchet feeder errors that are beyond the scope of this report.[3])

In examining the striking process, it is easy to understand the exact sequence responsible for die clashing. First of all consider that coin dies are the negative images of the final struck coin and are made by sinking designs and legends into steel cylinders which are then strengthened by

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1 Mossman, Philip L., "Error Coins of Pre-Federal America," *The Colonial Newsletter,* Vol. 44, No. 1, April, 2003, pp. 2601-37.

2 Peters, Ken, "Georgian Epidemics," *The Counterfeit Coin Story*, Thanet Press, Margate, Kent; 2002, p. 88.

3 Spilman, James C., "An Overview of Early American Coinage Technology," *The Colonial Newsletter,* Vol. 21, No. 1, April, 1982, pp. 765-76; Vol. 21, No. 2, July, 1982, pp. 780-98.

case hardening. These completed dies have two levels: [1] the engraved images and legends sunk below the surface, and [2] the remaining untooled, flat upper surface. When an annealed planchet is compressed between the opposing dies, the softer copper is forced into the engraved recesses of the hardened die, producing the elevated legends and designs in relief on the coin, while the higher, undisturbed flat surface, mute of any inscriptions, now forms the lower surface, or fields, on the mirror image coin. This, of course, is the normal situation with perfect dies oriented in the typical coin-turn position (180° to one another). If for any reason there is no soft intervening planchet to absorb the impact of the two opposing dies, these hard steel templates will strike each other producing an imprint of one die face on its opposite partner and vice versa. The area of the die most vulnerable to the defacing effect of this trauma will be the highest points, namely the fields. (See Clashing plate.)

Figure 1: Clashing. Crude George III counterfeit farthing showing evidence of clashing on both the obverse and reverse. On the obverse the exergual lines from the reverse are seen just above George's head and part of Britannia's shield design can be seen in his temple area. On the reverse note the strong impression of George's armor just above Britannia's head. [Shown approximately 1.5X actual size.] (See Clashing plate.)

The clashed dies would continue to have their original designs and legends cut in an incused manner but superimposed on these surfaces, namely the fields, would be elevated "ghost" images imparted on each of the opposing member of the die pair and recognizable in the same orientation as found on a struck planchet. When a new planchet is fed between the clashed die pair, these "ghost" images, newly imposed upon the higher surfaces of each die, can be evident on the lower relief on the finished coin, usually the fields. The end result on the continued striking of planchets with these clashed dies would be to produce a coin with the primary images in proper position but with the clashed die images and legends not only reversed but also incused and primarily visible in the fields. A representative example of a coin made with clashed dies is shown in Figure 1.

Whereas understanding of clashing is relatively straightforward, there are a few assumptions that were made in the described sequence which may be an oversimplification of the process. The first assumption was the clashing occurred with the dies in a coin-turn (180°) orientation. Although most colonial coins are found struck in a coin-turn orientation, this is not true of certain varieties within a series or for that matter, for specific coins within a variety whose axes may vary widely.[4] Therefore, how the dies were oriented to each other when the clashing occurred will determine the resultant placement of the clashed images on the struck coin. No matter what the axis at the time of the damage, the clashed image on the coin will be incused and reversed.

A second assumption was that the two dies were of equally hardened steel, so that equal clashing damage would be done to both dies. However, we know that the technique for tempering the dies varied greatly and some dies broke down rapidly while others lasted for extremely long periods. Therefore, when dies were clashed, the clashed images might only have been produced on the more malleable die and not on its partner. This would account for many coins showing clashing on only one side. Alternatively, we must also acknowledge that individual dies were rotated by

4 Moore, R., "Round and Round we Go or A Metal Turn New Jersey 17-K on a Rotated Coin Turn Counterfeit 177? Georgivs III Halfpence," *The Colonial Newsletter*, April, 1995, pp. 1495-99.

Plates start on sequential page 2991.

the minters, so that for a specific coin, a previously clashed die could have been paired with a perfect, unrelated and unclashed mate.

A third factor was that any die pair might be clashed multiple times, producing a sort of halo effect to the ghost image due to slight movements in the positioning of the dies. A prominent example of this is the New Jersey Maris variety, 46-e, where at least three instances of clashing were identified.[5]

Brockages and Die Caps

A typical brockage occurs when a struck planchet unexpectedly adheres to one of the two striking dies. (See Obverse Brockages plate and Die Cap and Reverse Brockages plate.) Usually the coin adheres to the upper or hammer die. Greasing of the dies to prevent rusting could be a primary factor responsible for this adhesion.[6] Once the coin is attached to the die, the opposite, non-adherent side of the coin becomes the new die face. (In the Die Cap and Reverse Brockages plate, the obverse of the coin has stuck to the obverse die and the reverse of this coin has become the new die face.) The next planchet being struck would receive the usual reverse design from the normal lower, unobstructed die, whose image would be in relief, having been struck from the incused die, while what should have been the obverse of the new planchet becomes the mirror image of the reverse design impressed by the adherent coin and would be incused. The coin face serving as the new die face is annealed copper and much softer than the original case hardened steel die, thus the reversed image on the new coin (which is a brockage) is weaker than any produced by the covered tempered die.

Now, if the original coin continues to adhere to the face of the die during the repeated strikings of other planchets, multiple brockages are produced. However, if additional brockage strikes occur, more of the metal on the periphery of the adherent coin will be pushed up around the die, thereby producing a progressively “capped shaped” contour or the so-called “die cap.”[7] (See Figures 2, 3, and 4.) In addition the image and legends on the exposed face of the adherent copper coin will spread out and flatten with repeated strikes and as more brockages are produced, they will become less distinct. Eventually, the adherent coin will fall away from the die or be extracted by the pressman. A description of the first known pre-Federal die cap coin is provided in the Appendix.

As mentioned, for each die cap, there may be many brockages struck. The type of brockage, either obverse or reverse, will depend on which die, the hammer or anvil, is covered by the adherent planchet. Categorization of brockages can be made into either Obverse Brockages or Reverse Brockages, based on whether the obverse of the die and its mirror image occurs on the coin or the reverse of the die and its mirror image appear. (See Obverse Brockages and Die Cap and Reverse Brockages plates.) Further categorization of brockages can be made into three types based on the relationship of the image on one side of the coin to the image on the other side.

5 The William O’Donnell Collection of New Jersey Coppers, Stack’s auction on Jan. 16, 2001, lot # 143.

6 Mossman, (above, n. 1), p. 2360.

7 Coin Facts Internet site:< http://www.coinfacts.com/error_coins/capped_die.htm>.

The Appendix is on sequential page 2990.

Figure 2: Adherent Side of Planchet in a Die Cap. Image of the obverse of a counterfeit George III farthing with a 10% off-center strike showing a prominent lip on the lower edge of the coin. The cupping of the coin is characteristic of the side of the coin adherent to the die. [Shown approximately 3X actual size.]

Figure 3: Non-Adherent Side of Planchet in a Die Cap. Image of the reverse of a counterfeit George III farthing showing smearing of the legends which is characteristic of the coin face that has served as the die in producing a brockage. [Shown approximately 3X actual size.]

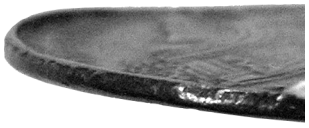

Figure 4: Edge of the Die Cap Planchet. The lower edge of the George III farthing, showing the concave lip that folds up above the obverse of the coin.

Figure 5: Obverse Type I Brockage. George III counterfeit halfpenny obverse in relief on one side with an incused mirror image on the other. Axis orientation is a perfect zero degrees.(See Obverse Brockages plate – the first images.) [Shown approximately 1.5X actual size.]

Figure 6: Reverse Type I Brockage. 1774 halfpenny reverse in relief on one side and in incused mirror image on the other. Axis is a perfect zero degrees. (See Die Cap and Reverse Brockages plate – the second images.) [Shown approximately 1.5X actual size.]

TYPE I BROCKAGES – By far the most commonly observed brockages are those with the properly oriented images and legends in relief, exactly reproduced as an incused mirror image on the opposite side of the coin. The orientation of the side in relief is exactly medal-turn (zero degrees or no rotation) when compared to the mirror image on the other side. In other words if one could look through the coin, the images on each side of the coin would align perfectly. This exact orientation is to be expected based on an analysis of the minting mechanism that produces them. (See Obverse Brockages plate and Die Cap and Reverse Brockages plate.) Two examples of Type I brockages – an obverse and a reverse brockage – are shown in Figures 5 and 6.

TYPE II BROCKAGES – Much less common are coins which have what appear to be partial brockages. In these Type II Brockages the incused mirror image is not exactly opposite the image on the relief side of the coin. Figures 7 and 8 show two examples of the Type II Brockage. The minting sequence leading to the production of these coins started with a planchet being minted in the normal manner. After striking, the coin was incompletely brushed away from between the two dies and lay on the reverse (anvil) die with George's head up. A new unstuck planchet was then placed between the two dies but partially lying on the incompletely removed but already struck planchet. The second planchet was then struck with the result being the second planchet had a complete George III imprinted in relief and centered properly from the upper die but the reverse was imprinted incused with the George III head from the first coin George III image partially sitting on the lower die and serving as the lower die substitute. This sequence also explains why the George III image in relief on the second coin is very weak over the portion where the image on the coin's reverse is offset. Basically where the offset existed, the planchet bent away from the die since it was not resting on a solid surface, resulting in the weakness.

TYPE III BROCKAGES - Occasionally "brockages" of questionable origin are found with one side in relief and the other incused, but with the devices and legends from completely different dies. While calling these coins Type III Brockages, in actuality they are not brockages at all but rather fantasy pieces made either contemporaneously or in modern times. An example of a Type III

Figure 7: Obverse Type II Brockage. George III counterfeit halfpenny in relief on one side with weakness in the strike on the edge between 5-10 o'clock. An offset incused mirror image is on the other side approximately 15% off-center. The area on the incused side which did not get struck corresponds exactly to the area on the relief side which is weakly struck. [Shown approximately 1.5X actual size.]

Figure 8: Obverse Type II Brockage. George III counterfeit halfpenny in relief on one side with weakness in the strike on the edge between 6-10 o'clock. An offset incused mirror image is on the other side approximately 30% off-center. The area on the incused side which did not get struck corresponds exactly to the area on the relief side which is weakly struck. [Shown approximately 1.5X actual size.]

Brockage is shown in Figure 9, where an Irish halfpenny reverse of 1781 in relief appears on one side of the coin and the mirror image of an Irish halfpenny reverse of 1766 incused appears on the other. Though superficially the coin looks like a true Type I Brockage, the combination of two different dies in forming this coin negates this possibility. Production of this coin probably started out with the minting of a normal 1781 Irish halfpenny. The obverse of the coin was then removed and the reverse of a normally struck 1766 Irish halfpenny was placed against the back side of the 1781 coin. Once hammered together, an incused image of the 1766 was transposed onto what had been the obverse of the 1781 coin. Of interest this particular coin weighs 104.6 grains which is relatively under weight (134 grains is standard). In addition the orientation of the two sides of the coin is approximately 180 degrees or coin-turn which also negates the possibility of it being a true brockage.

Interpretation is more difficult when multiple strikes of a brockage have occurred. In the Die Cap and Reverse Brockages plate, two possibilities concerning multiple strikes are presented. In the first, a Type I reverse brockage is simply restruck between two normal dies. This produces a coin which on one side has George III sharply struck in relief over some details of Britannia which is in an incused, mirror image orientation. This image of Britannia is the same that one would see with clashed dies which makes the differentiation of a coin with die clashing compared to a Type I brockage with multiple strikes problematic. (See Clashing plate.) However, a clashed die may contain only a fraction of the total opposite die design and the portion that is imprinted is largely limited to the higher surfaces of the die. Another hint that a coin may be a Type I brockage with multiple strikes is the orientation of the brockage struck image in regard to the second strike image. They may not correspond since it is unlikely the coin would have been re-struck in exactly the same original orientation, while clashed dies usually hold the same proper relative orientation. However, we also know that this is not a foolproof method for differentiating between the two; since the clashed coin's axial relationships are not always predefined.

Figure 9: Reverse Type III Brockage (pseudo-brockage). A 1781 Irish counterfeit halfpenny reverse (harp) in relief on one side with an incused image of a 1766 Irish counterfeit halfpenny reverse (harp) on the other side. The orientation of one side to the other reveals an axis of approximately 180 degrees. [Shown approximately 1.5X actual size.]

Figure 10: Flip-Over Re-struck Type I Brockage. An Irish halfpenny that was first struck as an obverse Type I brockage and then flipped over and re-struck. The image on the left shows George's head from the first strike but no evidence of the harp from the second strike. One might theorize that another blank planchet was fed between the reverse die and this coin prior to the second strike, preventing the harp's image from being imprinted on this coin. The second image has George's head imprinted twice facing in opposite directions, as expected. (See Die Cap and Reverse Brockages plate– the last example.) [Shown approximately 1.5X actual size.]

A final example of a multiple struck Type I brockage is when a brockage coin is restruck after being flipped between the dies. (See Obverse Brockages plate.) Again it must be pointed out that flipping the coin would most likely not produce a coin sitting in the exact orientation shown in the illustrations, but such an orientation can occur. An example is shown in Figure 10, which is an Irish counterfeit halfpenny obverse brockage that has been flipped between the dies and restruck. On the one side George III can be seen facing in both directions. George III facing right is the second strike while George III facing left is the result of the mirror image of George III produced in the formation of the brockage. The key deviation of this coin from the expected is the lack of the image of the normal reverse (Harp on the Irish halfpenny) intermingled with the image of George III on the second side. One explanation is that when the brockage was flipped another blank planchet was fed into the coin press and shielded this side of the coin from being imprinted with the harp image. However, if this occurred there is a coin out there with a normal Irish halfpenny reverse on one side and an incused mirror image of George III on the other!!

Conclusion

Since brockages are not rare in pre-Federal coinages, the occurrence of die cap coins should not only be anticipated but expected. Multiple brockages can be produced for each die cap coin, so a die cap error coin will be found less frequently. One reason pre-Federal die cap coins are not found more often is that the die cap coin, especially after repeated adherent strikes, is so deformed that the minters may have decided not to place it into circulation. In addition, the authors feel that die cap coins in the pre-Federal series often go unrecognized since they have not been sought. Any coin with strong features on one side and a mushy, spread out appearance on the other should be suspected of being a die cap. The first pre-Federal die cap coin to be described is presented in the Appendix and shown in Figures 2-4. CNL

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Appendix

Description of the Pre-Federal Die Cap Discovery Coin

General: A counterfeit George III English farthing which has been struck 10% off-center causing a loss of legend on the upper portion of the obverse and on the lower portion of the reverse. The farthing is struck coin-turn and has very fine to extremely fine detail (see Figures 2, 3 and 4).

Weight: 42.0 grains
Diameter: 22.1 mm (x-axis); 22.2 mm (y-axis)
Die Axis: 180° Rotation
Specific Gravity: 8.08

Obverse: The denticles occurring at the edge of the coin are elongated and their outer edges appear to end as the planchet begins to bend upward and away from the plane of the coin's surface (see Figure 4). The upward bend in the obverse's lower edge produces a significantly elevated lip. There is a much smaller lip that circumscribes the rest of the obverse. The overall result of this concave area, particularly in the lower portion of the obverse, is a partial cupping. The slanting surface of the lower portion of the obverse's lip has the appearance of an unstruck planchet. In addition, some of the lettering, particularly the "G" and "E"s have web-like elevations of metal (see Figure 2).

Reverse: The denticles seen on the upper portion of the reverse are doubled and slightly offset with one grouping of denticles appearing just above the set of denticles from the primary strike. There is an outline of an upside down incused mirror image of George III underlying the image of Britannia which most likely represents significant die clashing and would explain the second set of denticles. The legend lettering has a very stretched and blurred appearance and what appears to be isostasy with an imbedded or sunken edge on some letters. However, the central images of Britannia's head, arms, and shoulders are quite sharp. The upper edge of the reverse in the area outside the outer set of denticles curves away from the reverse's plane and has a rounded appearance (see Figure 3).

CLASHING

	OBVERSE	REVERSE
DIES		
	IMAGE OF GEORGE III INCUSED	IMAGE OF BRITANNIA INCUSED
STRUCK COIN		
	IMAGE OF GEORGE III IN RELIEF	IMAGE OF BRITANNIA IN RELIEF
DIES AFTER CLASH		
	IMAGE OF GEORGE III INCUSED; IMAGE OF BRITANNIA IN RELIEF	IMAGE OF BRITANNIA INCUSED; IMAGE OF GEORGE III IN RELIEF
STRUCK COIN FROM CLASHED DIES		
	IMAGE OF GEORGE III IN RELIEF; IMAGE OF BRITANNIA INCUSED	IMAGE OF BRITANNIA IN RELIEF IMAGE OF GEORGE III INCUSED

OBVERSE BROCKAGES

	OBVERSE	REVERSE
OBVERSE BROCKAGE PLANCHET WHEN REVERSE DIE STUCK TO DIE CAP PLANCHET	 IMAGE IN RELIEF	 IMAGE INCUSED AND WEAK
OBVERSE BROCKAGE RESTRUCK NORMALLY	 BOTH IMAGES IN RELIEF	 GEORGE INCUSED; BRITANNIA IN RELIEF
OBVERSE BROCKAGE RESTRUCK WTH BROCKAGE PLANCHET FLIPPED	 GEORGE FACING RIGHT IN RELIEF; GEORGE FACING LEFT INCUSED AND WEAK	 GEORGE AND BRITANNIA IN RELIEF AND STRONG

DIE CAP AND REVERSE BROCKAGES

	OBVERSE	REVERSE
DIE CAP PLANCHET AFTER OBVERSE STUCK TO DIE FOR MULTIPLE STRIKES		
	DIE CAPPED FORMED; IMAGE IN RELIEF	IN RELIEF IMAGE FLATTENED AND SMEARED
REVERSE BROCKAGE WHEN OBVERSE DIE STUCK TO DIE CAP PLANCHET		
	IMAGE INCUSED AND WEAK	IMAGE IN RELIEF AND STRONG
REVERSE BROCKAGE RESTRUCK NORMALLY		
	GEORGE IN RELIEF; BRITANNIA INCUSED	TWO RELIEF IMAGES OF BRITANNIA
REVERSE BROCKAGE RESTRUCK WTH BROCKAGE PLANCHET FLIPPED		
	BOTH IMAGES IN RELIEF	UNDER IMAGE INCUSED AND WEAK; OVER IMAGE IN RELIEF AND STRONG